DOCUMENT RESUME

ED 240 716 EA 016 483

AUTHOR	Huberman, A. Michael; And Others
TITLE	Innovation Up Close: A Field Study in Twelve School Settings. A Study of Dissemination Efforts Supporting School Improvement. People, Policies, and Practices: Examining the Chain of School Improvement, Volume IV.
INSTITUTION	Network of Innovative Schools, Inc., Andover, Mass.
SPONS AGENCY	Department of Education, Washington, D.C. Office of Planning, Budget, and Evaluation.
PUB DATE	82
CONTRACT	OE30-78-0527
NOTE	588p.; For related documents, see EA 016 480-489. Portions of document will not reproduce due to small print.
AVAILABLE FROM	Publications, The NETWORK, Inc., 290 South Main Street, Andover, MA 01810 ($25.00; 10-volume set of entire study, $150.00).
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF03 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Case Studies; Educational Environment; Educational Improvement; *Educational Innovation; Elementary Secondary Education; Federal Programs; *Field Studies; Nontraditional Education; *Program Effectiveness; *Program Evaluation; *Research Projects
IDENTIFIERS	Elementary Secondary Education Act Title IV C; National Diffusion Network

ABSTRACT

The fourth volume of a 10-volume report, this document provides a synthesis and analysis of indepth ethnographic case studies of 12 school districts engaged in school improvement efforts in a subsample of the study's 146 districts. All districts were implementing new practices, seven using National Diffusion Network innovations and five developing and implementing practices of their own design funded through Title IV-C Development Grants. Each stage of the implementation process is portrayed, from preadoption to institutionalization, when it occurred. The motivations, behaviors, and aspirations of school personnel involved in the improvement effort are explored; aspects of the implementation process, including factors affecting its success, are examined; and outcomes, including impact on students, are discussed. Four patterns leading to the success or failure of implementation are identified: "enforced, stabilized use," "overreaching," "blunting/downsizing," and "indifference/discouragement." (TE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

People, Policies, and Practices: Examining the Chain of School Improvement, Volume IV

ED240716

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
The Network

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Innovation Up Close: A Field Study in Twelve School Settings

EA 016 483

Volume IV

Innovation Up Close: A Field Study in Twelve School Settings

A. Michael Huberman
Matthew B. Miles
with Beverly Loy Taylor
and Jo Ann Goldberg

A STUDY OF DISSEMINATION EFFORTS SUPPORTING SCHOOL IMPROVEMENT

David P. Crandall, Ed.D.
Principal Investigator

The NETWORK, Inc.
Andover, Massachusetts

Copyright © 1982 by The NETWORK, Inc.

The research referred to in this document was conducted under contract #OE30-78-0527 with the U.S. Department of Education, the Office of Planning, Budget and Evaluation. The opinions expressed are those of the authors and do not necessarily reflect the position or policy of the Department of Education, and no endorsement by the Department should be inferred.

PREFACE

The Study of Dissemination Efforts Supporting School Improvement was a comprehensive, three-year examination of a broad spectrum of federal and state dissemination activities. It included a close look at selected strategies designed to improve schools by promoting the adoption and use of new educational practices developed with federal support. Sponsored by the Office of Planning and Evaluation of the U.S. Department of Education, the study was conducted by The NETWORK, Inc., in collaboration with several other research and development organizations, including the University of Texas' R&D Center for Teacher Education, the American University's Knowledge Transfer Institute, the Center for Policy Research and UCLA's Center for the Study of Evaluation.

The study examined four distinct levels of the educational system: federal, state, external agent, and local. A "zoom lens" design began with an overview of forty-five programs in the U.S. Department of Education that engaged in dissemination or dissemination-related activities. Fifteen of these programs were selected for in-depth analysis at the federal level. At the state level, we examined dissemination activities in ten states representative of the continental forty-eight.

Four strategies, each reflected in a selected federal program, were chosen for in-depth investigation at the local level. The strategies, and their programmatic exemplars, are:

- Interpersonal Linkage of Validated Practices, exemplified by the National Diffusion Network (NDN), including its ESEA Title I subnetwork
- Commercial Distribution, exemplified by the Bureau of Education for the Handicapped Marketing Program
- State Administration of Dissemination, exemplified by ESEA Title IV-C Adoption Grants
- Local Development/Invention, exemplified by ESEA Title IV-C Development Grants

A close look at 146 schools and school districts in the ten states, whose improvement efforts were supported by one of these programs, allowed us to answer three important questions:

1. To what extent are new practices supported by the federal programs being implemented in schools?
2. What factors influence successful implementation?
3. How are policies, conceived at one level, implemented at other levels?

Because three of the four programs chosen rely on implementing practices developed outside the local setting, we were interested in the vehicles employed by the programs for dissemination, particularly the assistance provided by external agencies and individuals.

Focusing-in the lens one more time, we conducted an intensive field study of twelve of our local sites over the course of a school year. Here, we were able to examine the interpersonal and organizational dynamics surrounding implementation as school people worked to incorporate innovative practices.

The study as a whole was a massive effort that required the energies and resources of countless people. Altogether, we:

- interviewed and surveyed over 5,000 educators;
- accumulated over 1500 hours of interview tapes;
- spent over 700 person-days "on the road;"
- made approximately 150 observations; and
- analyzed over 400 documents.

The three years were spent in design (Year 1), data collection (Years 1 and 2), and data analysis (Years 2 and 3).

The master report, People, Policies, and Practices: Examining the Chain of School Improvement, consists of ten volumes which describe the results of the study. Volume I (Setting the Stage for a Study of School Improvement) sets the study within a framework of federal school improvement policies and past studies of these policies. The objectives, design, and research methodologies used in the study are also described.

Volume II (Portraits of the Changes, the Players, and the Contexts) describes what was found in the 146 school districts that comprised our local site sample. Characteristics of the people, the innovations, and the settings are reported, as are the contributions of external assistance and the outcomes accrued from involvement in school improvement.

Volume III (Models of Change) introduces the causal models of the school improvement process that helped us determine what factors influenced success. The findings are reported for several outcomes at both the organizational (school) and individual (teacher) level.

In Volume IV (Innovation Up Close: A Field Study in Twelve School Settings), we examine the dynamics of twelve districts -- varying in experience with the new practices, in community type, and in the scope of their efforts -- involved in improvement efforts supported by the National Diffusion Network or ESEA Title IV-C

Local Development Grants. The volume provides an in-depth picture of the motivations, behaviors and aspirations of school people as new practices are implemented and maintained.

Volumes V, VI and VII analyze the government's role in dissemination for school improvement. In Volume V (Dissemination for School Improvement: An Analysis of Nine Federal Education Programs), we profile nine widely different federal programs sponsored by the then U.S. Office of Education. The volume examines the assumptions underlying the programs, and how these shaped each program's dissemination strategy.

In Volume VI (Dissemination at the National Institute of Education: Contending Ideas about Research, Practice, and the Federal Role), six federal dissemination programs funded by the NIE are examined. We tell the story of the programs' emergence, implementation, and -- to the degree possible -- impact, and discuss implications of the programs for the federal role in dissemination.

In Volume VII (Configuration of Federal and State Dissemination Activities), we present a comparative analysis of federal-state relationships for dissemination and school improvement in our ten sample states. We examine the impact of federal initiatives and other critical influences on the roles and operations of state education agencies.

Volume VIII (The Infrastructure of Innovation: The Case of the National Diffusion Network) examines the communication and rewards structure of a single federal program -- the National Diffusion Network. We examine the NDN as a decentralized service delivery system which has evolved to a grass-roots effort with greatly reduced dependence upon federal leaders for direction and control. Network analysis, based on a census of all members and adjuncts of the NDN, provides interesting insights into a unique federal program.

Volumes IX and X summarize our efforts. Volume IX (Implications for Action) integrates findings from all components of the study, and discusses implications for policy and practice at all levels of the educational enterprise. Volume X, our Executive Summary, provides a distillation of study methods and findings for a general audience, as well as an annotated bibliography of the report series and related study documents.

ACKNOWLEDGEMENTS

The Study of Dissemination Efforts Supporting School Improvement engaged literally a cast of thousands. At the peak of activity, it involved some 5,000 educators from all parts of the country, with a wide range of roles and responsibilities, whose only commonality was the desire to improve the education of our nation's youth. Although it is impossible to personally thank everyone, we pause here to acknowledge their important contributions.

Our Project Officer: Ann Bezdek Weinheimer, for her superb guidance and unending support;

Our Policy Advisory Group: Dave Clark, Ellie Farrar, Michael Fullan, Hendrik Gideonse, Egon Guba, Milbrey McLaughlin, David Wiley, and Ward Mason, for their help in conceptualization and design, and their thorough and honest feedback;

Our Senior Consultants: Jeff Eiseman, Gene Hall, Ann Lieberman, Matt Miles, and Bill Schmidt, for keeping us on track early in the study, and contributing substantively to design, analysis and reporting;

Our NETWORK Study Team: Charles Thompson, Jim Taylor, Joyce Bauchner, Glenn Shive, Judy Taylor, Susan Loucks, and Pat Cox for late nights and longer days, and contributing a significant piece of their lives;

Our Subcontractor Teams: Gene Hall, Susan Loucks, Archie George, and Susan Heck at the University of Texas R&D Center for Teacher Education; Ron Havelock, Pat Cox, Michael Huberman, Gwen Moore, Nanette Levinson and JoAnn Goldberg at the American University Knowledge Transfer Institute; Matt Miles and Beverly Taylor at the Center for Policy Research; Jay Guenon and Bill Paddock at Lam, Inc; and Adrianne Bank and Nancy Snidman at the UCLA Center for the Study of Evaluation, for their commitment to the spirit and hard work of collaboration, and their significant contributions to components of the study;

Our Field Coordinators and Researchers from each organization: David Zacchei, Wendy Gelberg, Marian Grogan, Renee Lerche, Mike Mayo, Paulette Meleen, Larry Vaughan, Stone Wiske, Barbara Abeles, Warren Berube, Harvey Bondar, Debbi Miles and Susan Solat at The NETWORK; Lila Oshatz, Evelyn Gilbreath, Eddie Henderson, Vivian Smith, Suzie Stiegelbauer, and Margaret Valentine at Texas R&D; Pat Cox, Dawn Badrick, Nancy Smith, Sheila Wolfe and Ann Kelleran at the Knowledge Transfer Institute, for their dedication to "bring'em (the data) back alive" in the face of thousands of miles of travel, coping with balky tape recorders, living out of suitcases and strange motel rooms for weeks at a time, and for representing us in a thoroughly professional way to new and unfamiliar folks day after day;

Our NETWORK Support Team: Pat Bales, Margaret Broderick, Ronna Coppola, Kory Hellmer, Clif Lund-Rollins, Elsa Martz, Nancy Lund, Nick Thorkelson, Annmarie Lenson, and Ruth Anne Shepard who edited, typed, organized, copied, served, drew, retyped, collated, hustled, and cleaned up after us times too numerous to mention, for all of that and more;

And finally, to the people who other studies label "respondents" but whom we considered and related to as "collaborators": over 4,000 teachers, nearly 400 building and district administrators, 100 people in external assistance roles, 50 personnel in ten state departments of education and 100 federal program staff, for their dedication to making schools a better place for people, and helping us learn the good news:

SCHOOL IMPROVEMENT EFFORTS ARE ALIVE AND WELL
IN SCHOOLS ACROSS THE U.S.!

And, on a more personal note:

They said it couldn't be done; parts of it, yes. The whole humongous thing? No way! But we believed, we persevered, and we succeeded.

Managing (producing?) an enterprise of this scale and complexity was not unlike being entrusted with a string of race horses while also being expected to efficiently operate race tracks all over the country. One's charges must run, sometimes for practice, sometimes in claim races, sometimes for fun, and sometimes for substantial purses. At the tracks, stands must be cleaned, popcorn purchased, receipts counted, special events trumpeted, sound systems repaired. Oh yes, add to this the necessity of producing a comprehensive story of each season's successes (and failures), with appropriate statistical detail for the aficionados and photos for the occasional attendee. Perhaps such images will help you connect with the range of reactions I have had to this point, when all that remains of the season is the final manuscript which down-plays the thrills and recalls the tribulations.

Although flashes of Hercules and his labors in the stables come to mind, as do painful recollections of the occasional reluctance of the imported studs to perform as desired, and more than a few false breaks at the gate, overall I am immensely satisfied with both the process and the product of our collective odyssey. On balance, it was a frolic with a wonderful group of thoroughbreds.

All the players in our production performed admirably; their contributions were manifold. Three are worthy of special mention, one whose contribution was the necessary catalyst at the front-end, enabling our adventure to commence and continue; one whose firm hand kept us on our course; and another whose contribution at the back-end ensured the successful conclusion and chronicling of our journey with style and substance. My very special thanks to:

Ann Bezdek Weinheimer, whose courage in championing our unconventional approach launched us on our journey with confidence. During the study, Ann was our trailblazer and guide through the bureaucratic thickets. We benefited mightily from her detailed and hard-hitting critiques, her unwavering support for our efforts through the low moments and her praise at the high ones. Perhaps most of all, we treasure her belief in us and her infinite patience.

Joyce Bauchner, whose truly special ability moved us from abstract conception to earthly operation. Her commitment to task execution and consummate attention to detail served the study better than the best Master Sergeant. (Plus she's incredibly bright and doesn't smoke cigars.) Her formal titles and responsibilities belie the breadth and depth of her contribution to thinking up and working through this massive endeavor. As she remarked more than once, "Well, no one has ever done this before, but let's get on with it." And we did. My plans and our various teams' intentions, difficult as they were to arrive at, were just the first step. Seeing that they were carried out, by dispersed groups in six locations, on time and budget and in keeping with the overall conception was up to Joyce. Without her we'd still be picking up the stragglers and searching for the lost interview tape.

Susan Loucks, whose capacity for concentration, sustained high quality output and tolerance for my idiosyncracies is surpassed only by her unparalleled modesty, calm and good humor, is the single most important reason that the complex innovation of this study is represented through its master report series and numerous other publications. Individual authors have each made significant contributions in their own right. Weaving individual strands of reasoning into a coherent fabric that is both sturdy and stylish stands as the latest in a string of behind the scenes contributions that have been too often unacknowledged. Hers has been the longest and hardest race of all, because it's been run after the others have bedded down and the spectators have left the track. Had this been a race for the roses, the bouquet would belong to Susan.

Each has contributed in a special way to my realizing a major dream. From a field of exceptionally talented thoroughbreds, they have been a trio of true believers. Without these three, it wouldn't have happened; with them, I would try anything.

David P. Crandall, Ed. D.
Principal Investigator

SUMMARY: VOLUME IV

This is a field study of twelve different efforts to improve schools, carried out in rural, urban and suburban settings in ten states from Maine to California. It aimed to describe the process of educational change in realistic, close-up terms, and to develop systematic explanations for its success or failure.

Background. School improvement is a messy, rich process that unwinds over several years, making understanding and explanation difficult. The field study was designed to supplement the survey data being collected by the Study of Dissemination Efforts Supporting School Improvement, emphasizing the process of change over time, and attending to latent issues and unexpected events in the local context.

Methods and sample. Adapting classical ethnographic methods, we collected data through non-participant observation, semi-structured and informal interviews and documents during 3-4 intensive site visits over the 1979-80 school year. Survey data from each site were also available. A set of focused research questions guided data collection and analysis.

The 12 sites included seven who were implementing National Diffusion Network (NDN) innovations, and five who were developing and implementing their own programs with ESEA Title IV-C funds. The sites ranged widely on geographic location, setting, type of innovation and length of implementation.

The data (over 2,700 pages of field notes) were analyzed using a common format of tables, charts and narrative text, resulting in twelve case reports. The cross-site analysis reported here, after summarizing the case reports briefly, utilized multi-site matrices and "causal networks" to develop generalizations and explanations of the implementation process that made sense across the 12 sites.

Before implementation. The innovations being tried were not minor; they were both elementary and secondary-level and ranged from reading programs to environmental science units, work experience programs and a complete alternative school. About half emphasized services to low-ability students. Most of the districts had active central office energy for improvement, and a moderate to high past innovation history, though the schools were somewhat more conservative. The local environment was reasonably stable for most.

Adoption. We found multiple, sometimes tangled motives for adoption, including, for administrators, instructional improvement and new funds, and for teachers the chance to grow and enhance their current practice. Career plans figured in adoption for nearly half of both teachers and administrators, who wanted to maintain their positions or move up. The basic adoption decision was usually made in the central office, with some consultation and negotiation to deal with doubts.

Early implementation. The innovations loomed large for most site people, especially teachers, who saw them as complex, demanding, and often a poor fit to past practice. Administrators tended to minimize such problems; and though they noted organizational "fit" problems to some extent, largely failed to anticipate the real stresses ahead. Most sites, except those where users had successfully negotiated "latitude" to simplify and "midgetize" the innovation, experienced a rough start, with much user confusion, overload, and self-preoccupation. Better preparation and assistance helped somewhat, but mainly for smaller-scale innovations.

The role of assistance. Sites with larger, more demanding innovations, with moderate funding, gave more frequent, intense and sustained help to users; such user-oriented help, if sustained, contributed significantly to stabilization, as well as to user reassurance, problem-solving skill and repertoire expansion.

Later implementation. Within six to eighteen months, depending on innovation size and demandingness, most users achieved mastery of the practice involved, and it "settled down', so that users felt confident and successful, and could refine and extend the innovation. But user mastery and settledness did not guarantee continuation, which depended on organizational-level routinization.

Transformations. Our theoretical framework emphasized that over time, innovations are usually themselves altered, while in turn altering their users, and the organizational contexts in which they are implemented.

Most of the innovations changed and evolved considerably during implementation, mostly in the direction of simplification/reduction, with some reconfiguring of the practice to fit the local setting. Such changes happened more frequently for demanding, poorly-fitting innovations, if administrators granted users "latitude" to make such changes. Some sites "overreached", then retrenched; others "salvaged" originally-discarded aspects; others "locally refitted" the innovation. Only two sites "enforced" faithful implementation.

There were moderate to strong changes in users in half the sites; many became better "clinicians", who were able to help individual students productively. Early user changes were mostly in attitude to the innovation and skill in using it; later there were shifts in more basic attitudes and constructs, such as self-efficacy, trust in pupils, and professional self-image.

There was organizational change in about half our sites—though this was mostly limited to the installation of the innovation itself. Bigger, more demanding innovations, chosen because of local pressures for improvement, and accompanied by administrative commitment and adequate user support led to full-scale implementation and changes in organizational structure, procedure and climate.

Outcomes. First we looked at three outcomes emphasizing fullness of implementation; stabilization, percentage of use, and institutionalization. Most of our sites achieved moderate to high stabilization, through user practice mastery and program "settledness". Good assistance was critical for mastery; settledness was achieved either by "enforcement" plus assistance, or by refitting the innovation to the local setting.

Considering percentage of eligible users, we found that a few sites achieved very widespread use within buildings and their district, about half achieved it for within-building or specialized use only, and the remainder had minimal percentage of use. Administrative pressure accompanied by assistance, leading to user commitment and mastery, made the difference. Good teacher-administrator relationships were required for success.

About half the sites showed reasonably strong institutionalization. Here too pressure and assistance were needed, plus organizational changes needed to support routine use by many users. Job stability for both user and administrators helped.

Our second set of three outcomes emphasized impact: student impact, user capacity change, and job mobility.

Student impact was high to moderate in most of our sites, and was largely positive; it included general or meta-level effects (such as increased responsibility-taking) beyond specifically-intended outcomes (such as improved reading performance). There was more impact when good-quality innovations (the bulk of those in the sample) were used skillfully and stably by committed users. There was less impact when innovations were "adapted out of shape", or used indifferently.

Did the programs develop increased user capacity? Yes, in slightly over half the sites, where added career "crystallization", more "cosmopolitanization", and improved dissemination skills developed in addition to the improved teaching concepts and skills already noted. In brief, if users attempted more, they learned more that they could transfer beyond the immediate innovation.

There was a moderate amount of job mobility of key people, about a third of it upward, in most of our sites. There was more mobility in IV-C than in NDN sites. Mobility occurred because of innovative success, because of sheer opportunism, and because of locally-developing turbulence, such as fiscal crises. Job mobility often, but not always, destabilized the local project.

Success and failure. Summing outcomes across the 12 sites, we found four patterns leading to success or failure. "Enforced, stabilized use" (2 sites) resulted in the best over-all outcomes, where administrators pushed, required faithful implementation of a demanding project, and gave collaborative assistance to hard-working users who were struggling to achieve practice mastery. "Overreaching" projects (4 sites) also started big, but with less pressure; committed users learned to do the practices well, but burnout, job mobility and weak institutionalization sometimes reduced over-all impact. "Blunting/downsizing" occurred for 4 NDN projects, which were excessively weakened by reductions in scope. Finally, we saw project failure in only 2 sites; it was an "indifference/discouragement" scenario, where pressure without assistance in implementing a weak project led to low motivation on the part of users and administrators alike.

On balance, it can be concluded that innovations like these can work well, if administrators and teachers aim high, and can work well together to link their separate worlds. Administrative commitment, pressure and assistance must be coupled with users' mastery of the innovation, their mutual support, professional development, and commitment. It can be done.

TABLE OF CONTENTS

Page

I. Introduction. 1

- Background. 4
  - Reasons for the field study. 4
  - Choosing our sample of sites 9
  - Data collection methods. 13
  - Our conceptual scheme. 16
  - Data analysis methods. 21

II. Twelve brief case histories 26

- Astoria 26
- Banestown 28
- Burton. 30
- Carson. 32
- Calston 34
- Dun Hollow. 36
- Lido. 38
- Masepa. 40
- Perry-Parkdale. 42
- Plummet 44
- Proville. 46
- Tindale 48

III. Before implementation 50

- The local contexts. 50
  - Structural properties. 50
  - Functional properties. 53
- The innovations 56

IV. The implementation process. 60

- Adoption of the innovation. 60
  - Introduction/overview of findings. 60
  - Motives. 61
  - Attitudes. 73
  - Adoption timelines 75
  - Conclusions. 81
- Views of the innovation: initial perceptions and assessments. 83
  - Introduction/overview of findings 83
  - Looking across the 12 sites. 88
  - Conclusions. 107
- Early implementation. 109
  - Introduction/overview of findings. 109

(Early implementation, cont'd) Page

Mastering the innovation. 111
Feelings and concerns during early use. 114
Factors contributing to successful early use. 116
Early experience and the components of preparedness 120
Other influences in early implementation. 128
Conclusions 135

The role of assistance 137
Introduction/overview of findings 137
Examples of assistance at the site level. 138
Over-all assistance presence. 145
Types of assistance, over time. 157
The specific effects of assistance. 165
The antecedents of assistance 171
The consequences of assistance. 174
Conclusions 176

Later implementation 177
Introduction/overview of findings 177
Components of user practice mastery 178
Darker and broader concerns 189
Later implementation: a profile of two sites. 191
The process of practice mastery: a summary. 196
Stabilization and continuation. 200
Conclusions 211

V. Transformations over time. 213

Modifications in the innovation. 215
Introduction/overview of findings 215
Type, extent, and significance of changes over time 217
Factors inducing changes in the innovation. 226
A general model and four scripts. 239
Conclusions 247

Changes in users' perceptions and practices during implementation. 250
Types of reported change. 251
How much change? 262
Predictors of practice change 267
Conclusions 274

Transformations in the school as an organization 277
Introduction/overview of findings 277
Organizational change: three illustrations. 279
The extent of organizational change 281
The content of organizational change. 284
What may be causing organizational change? 288
Conclusions 308

Page

VI. The outcomes of school improvement 311
- Predicting outcomes 313
- Stabilization of use 316
  - Introduction/overview of findings. 316
  - What it takes to get stabilized. 318
  - Scenarios leading to high stabilization. 324
  - Scenarios leading to lower stabilization 330
  - Conclusions. 336
- Percentage of use 337
  - Introduction/overview of findings. 337
  - What caused differences in percentage of use? 340
  - Scenarios leading to high percentage of use. 347
  - Scenarios leading to low percentage of use 351
  - Scenarios for moderate to full use (with specialized population) 353
  - Conclusions. 354
- Institutionalization. 355
  - Introduction/overview of findings. 355
  - The extent of institutionalization 359
  - Explaining institutionalization. 362
  - Scenarios leading to high institutionalization 366
  - Scenarios leading to low institutionalization. 372
  - Institutionalization: an epilogue. 376
  - Conclusions. 379
- Student impact. 381
  - Introduction/overview of findings. 381
  - Types and extent of student impact 382
  - Factors causing student impact 386
  - Scenarios leading to high student impact 391
  - Scenarios leading to low student impact. 397
  - Conclusions. 400
- User capacity change. 401
  - Introduction/overview of findings. 401
  - Types and degrees of capacity change 404
  - Scenarios leading to low capacity change 408
  - Scenarios leading to high capacity change. 411
  - Conclusions. 415
- Job mobility. 416
  - Introduction/overview of findings. 416
  - Timing and extent of job mobility. 416
  - Low-mobility sites 419
  - Sites where mobility occurred. 420
  - Conclusions. 430

VII. Why school improvement succeeds or fails. 431
- Introduction/overview of findings. 431
- Levels and patterns of outcome 432
- High outcomes from enforced, stabilized use. 435

Page

Moderate/high outcomes from high mastery and low settledness. 440
Moderate/low outcomes from program blunting/downsizing. 446
Failing: low outcomes from indifference and discouragement . . . 451
Conclusions 457

VIII. What have we learned? Summary and integration of findings. 461
Our findings in review. 461
School improvement: some pervasive dilemmas 473

References 479

Appendices 482

A. Research questions guiding the study
B. Handout explaining the field study to sites
C. Interview schedule, users
D. Data collection effort and methods, by site
E. Sensitizing codes, and operational definitions
F. Example of an organizational chart
G. Example of an event listing
H. Example of a growth gradient chart
I. Example of an event-state network
J. Example of a causal network and associated text
K. Comparison of survey "fidelity" data with field study "innovation change" data

LIST OF TABLES, CHARTS AND FIGURES

Tables **Page**

1. List of antecedent, mediating and outcome variables. 20
2. SES levels of districts in sample. 52
3. Reasons given for adoption by users. 64
4. Reasons given for adoption by administrators, and comparison with users' responses. 68
5. Dominant career incentives for users and administrators. 71
6. Centrality and attitudes at the time of adoption 73
7. Centrality and career relevance for users. 74
8. Centrality and career relevance for administrators 74
9. Summary: attitudes by role, at time of first implementation. 107
10. Sources and receivers of assistance, in high- and low-assistance sites 149
11. Summary of short- and long-term effects of assistance, by assistance domain. 167
12. Problems and concerns stemming from major tasks of later implementation at field sites. 187
13. Later implementation: additional individual and institutional concers. 190
14. User change during implementation: types and items 252
15. Exemplary sites showing different degrees of user change 265
16. Reported changes in user practice and perception 268
17. Extent of organizational change. 281

Charts

1. Characteristics of field study sample. 10
2. Local contexts: structural properties. 51
3. Local contexts: functional properties. 55
4. The innovations. 57
5. Motives and attitudes of users, non-users and administrators at Masepa 62
6. Adoption timelines 76
7. Roles played in the adoption decision by central office administrators, building administrators and teachers 79
8. Users' initial reactions at Masepa and Perry-Parkdale sites. 87
9. Initial assessments of the innovation at 12 field sites. 89
10. Initial and revised attitudes toward the innovation at 12 field sites. 106
11. Degree of preparedness as related to ease of early implementation at field sites. 118
12. Users' early implementation experience at Lido (NDN) 121
13. Users' early implementation experience at Masepa (NDN) 121
14. Additional factors related to early implementation 130
15. Specific types and effects of ongoing assistance, at Masepa site 143
16. Specific types and effects of ongoing assistance, at Dun Hollow site 145

Charts, cont'd. Page

17. Sources, amounts and recipients of assistance. 146,147
18. Source, frequency and orientation of assistance, Masepa site 159
19. Source, frequency and orientation of ongoing assistance, Dun Hollow site. 160
20. Frequency and orientation of assistance, by phase. 161
21. Effects of ongoing and event-linked assistance, by sites 166
22. Antecedents and consequences of assistance 172
23. Users' second year of implementation at Lido 192
24. Users' third-four years of implementation at Lido. 192
25. User behavior and attitudes at Masepa: mid-November—May (second 6 months). 193
26. User practice stabilization at Masepa. 195
27. Synthesis of early and late stages of practice mastery 199
28. Stablization of use, as a function of practice mastery and program settledness. 203
29. Relationships between user practice stabilization and local continuation 205
30. Type, evolution and extent of changes in the innovation (NDN sites and IV-C sites) 218
31. Effect of five predictors on changes in the innovation 228
32. Program requirements and implications for implementation (Masepa site). 229
33. Effects of readiness, latitude and scope on changes in innovations 234
34. Predictors of magnitude of user practice change. 269
35. Changes in the organization during implementation, at Carson, Perry-Parkdale, and Burton 280
36. The content of organizational changes. 285
37. Contextual features as predictors of organizational change 289
38. Implementation features as predictors of organizational change. . . . 301
39. Outcome of school improvement efforts, by sites. 313
40. Selected variables predicting stabilization of use 319
41. Immediate & remote paths from predictors to stabilization of use. . 323
42. Percentage of use, by sites. 339
43. Antecedents of percentage of use 342,343
44. Institutionalization, Banestown site 356
45. Institutionalization at the school and district levels, by sites . . 360
46. Antecedents of institutionalization. 363
47. Institutionalization: predictions and actuality. 378
48. Program objectives, and student impact (direct, meta-level and side effects). 384,385
49. Antecedents of student impact. 387
50. Instances of capacity change, by sites 406
51. Job mobility at sites, by time period. 418
52. Performance of 12 sites on outcome measures. 433

cont'd.

Figures Page

1. Field study conceptual flow chart (initial version). 17, 214
2. Revised flow model. 19
3. Location and orientation of assistance during planning and implementation, Carson site 139
4. Location and orientation of assistance during planning and implementation, Calston site. 140
5. The consequences of assistance. 175
6. Practice mastery plotted as a learning curve. 197
7. Relationship of pressure to adopt and degree of latitude given to users at 12 sites. 237
8. Model of the process of innovation change 240
9. Causal flow chart tracing user practice changes 275
10. Contextual features causing organizational change 298
11. Contextual and implementation-process features causing organizational change 309
12. The school improvement process: predictors and outcomes 315
13. Practice mastery and stabilization of use: Tindale (IV-C) 324
14. Practice mastery and stabilization of use: Perry-Parkdale (NDN) . . . 325
15. Practice mastery and stabilization of use: general model with latent variables 327
16. Program settledness and stabilization of use: Tindale (IV-C). 328
17. Program settledness and stabilization of use: Astoria (NDN) 329
18. Moderate practice mastery and stabilization of use: Masepa (NDN). . . 330
19. Moderate practice mastery and stabilization of use: Banestown (NDN) . 331
20. Lower practice mastery and stabilization of use: Proville (IV-C). . . 332
21. Lower stabilization of use from program unsettledness: Carson (IV-C). 334
22. Low stablization of use from program unsettledness: Proville (IV-C) . 335
23. Factors predicting percentage of use. 346
24. Commitment and practice mastery as routes to high percentage of use: Tindale (IV-C). 347
25. Commitment and practice mastery as routes to high percentage of use: Masepa (NDN). 348
26. Administrative pressure and commitment as routes to high percentage of use: Carson (IV-C). 349
27. Administrative influence as a route to high percentage of use: Banestown (NDN) 349
28. Administrative pressure, lack of assistance and low commitment as routes to low percentage of use: Proville(IV-C). 351
29. Administrative latitude and program transformation as a route to low percentage of use: Burton (NDN). 352
30. Mandated, stable use as a route to institutionalization: Tindale (IV-C). 366
31. Mandated, stable use as a route to institutionalization: Astoria (NDN) 367
32. Mandated, stable use as a route to institutionalization: Carson (IV-C) 368
33. Mastery and commitment as a route to institutionalization: Lido (NDN). 370
34. Mastery and commitment as routes to institutionalization: Plummet (IV-C) 371

Figures, cont'd. Page

35. Vulnerability as a route to low institutionalization: Perry-Parkdale (NDN) 373
36. Indifference as a route to low institutionalization: Dun Hollow (IV-C) 374
37. Enforced, supported mastery as a route to high student impact: Tindale (IV-C) 391
38. Stabilized, committed mastery as a route to high student impact: Perry-Parkdale (NDN) 393
39. Stabilized, committed mastery as a route to moderate student impact: Carson (IV-C) 395
40. Weak commitment as a route to low student impact: Proville (IV-C) 397
41. Program-blunting as a route to low student impact: Astoria (NDN) 398
42. Causal flow chart tracing user practice changes as antecedents of user capacity change 403
43. Downsizing as a route to low capacity change : Burton (NDN) 409
44. Fouling up as a route to low capacity change: Dun Hollow (IV-C) . . . 410
45. Achieving major practice change as a route to high capacity change: Tindale (IV-C) 411
46. Enforcement of major practice change as a route to capacity change: Tindale (IV-C) 413
47. Cosmopolitanization theme: Perry-Parkdale (NDN) and Lido (NDN) . . . 414
48. Job mobility as casuality: Calston (NDN) 421
49. Job mobility as opportunism: Proville (IV-C) 422
50. Job mobility as success-driven advancement: Astoria (NDN) 423
51. Job mobility as success-driven advancement: Tindale (IV-C) 424
52. Job mobility as success-driven advancement: Carson (IV-C) 426
53. Job mobility as win-lose scenario: Perry-Parkdale (NDN) 428
54. Group 1: high outcomes from mandated, stable use 437
55. Group 2: moderate/high outcomes from high mastery and low settledness 442
56. Group 3: moderate/low outcomes from program blunting/downsizing . . . 448
57. Group 4: low outcomes from indifference and discouragement 453

CHAPTER I

INTRODUCTION

> Just another dumb program they were trying to shove down our throats. (Teacher, Proville site)
>
> I like to tinker with the organization, see things happen. Our greatest enemy is social inertia. People are mostly uncomfortable with change. (Superintendent, Burton site)
>
> We were so damn excited, we would have a meeting at six in the morning, or start at four, and go to seven, eight or nine p.m. We thought we really had it. Measurable outcomes would happen. (Counselor, Carson site.)
>
> I had nine kids who were really tough. They felt the success. For some of them, it was probably the first time. They were really gung-ho. They wanted to get those tests done. (Teacher, Masepa site)

Which of these quotes best serves as an epigraph for our study of the way school improvement works? No single one does——and all do. School improvement is a messy, rich process full of coercion and shared struggle, indifference and heavy involvement, uncertain results and real payoffs. That process, deeply conditioned by local history, takes place over a long period of time——usually several years——in a uniquely-defined context that includes a specific district. The process unwinds in its own terms, mocking standard frameworks, and challenging the researcher to make a coherent summary from the welter of observed and reported events. And even when the story of the implementation process has emerged, there is still another challenge: developing explanations, a reasonable web of causal influences that helps us understand, not just that a school improvement effort worked or failed in the special circumstances at Plummet, Burton, Carson or Masepa, but why it did.

This volume reports our study of 12 efforts to improve schools, carried out in rural, urban and suburban settings in ten states from Maine to California. We chose them from the larger sample of 146 schools studied by survey methods, and visited them repeatedly, talking to teachers, administrators, students and parents; watching classrooms, meetings and life in the teachers' lounge; and reading documents from project proposals to notices sent home to parents. Using a standard format, we prepared twelve case reports, each of which described the context, processes and outcomes of the school improvement effort in detail.* The reports totaled nearly a thousand pages, so——as rich and fascinating as they are——we do not include them here in their entirety.

---

*The case reports are available at cost from The Network, Inc., 290 South Main St., Andover, Ma 01810. The twelve titles (site names are pseudonyms):

Astoria (NDN):** Goldberg, J.A. Early Prevention of School Failure, Astoria, Southeast
Banestown (NDN): Huberman, A.M. Project Catch-Up, Banestown, Northeast.
Burton (NDN): Taylor, B.L. IPLE (Institute for Political and Legal Education), Burton, Midwest.
Calston (NDN): Goldberg, J.A. Matteson 4-D Reading, Calston, Midwest
Carson(IV-C):# Miles, M.B. IPA(Individual Planning Approach, Carson, Plains.

** Programs in these sites were sponsored by the National Diffusion Network.
# Programs in these sites were supported by Title IV-C development grants.

This volume represents a distillation and analysis of the 12 site reports; it seeks to preserve both the particularity and earthiness of the original reports, and to draw systematic, well-founded conclusions about the processes and outcomes of school improvement.*

Overview of this volume. We begin with the background of the field study, describing why we did the study, how sites were chosen, our data collection methods, our conceptual scheme, and our methods of data analysis.

Chapter II gives a short history of what happened at each site. Then we turn to our findings. The format for chapters and major sections begins with an overview and brief summary, then turns to the substance, and ends with final conclusions.

Chapter III describes the local site contexts, and the innovations that were being implemented in them. Chapter IV is devoted to processes occurring during school improvement: the decision to adopt or begin

---

(footnote cont'd)

Dun Hollow (IV-C): Taylor, B.L. Eskimo American People's Culture Curriculum, Dun Hollow, Northeast.
Lido (NDN): Taylor, B.L. KARE (Knowledgeable Action to Restore Environment), Lido, Northeast.
Masepa (NDN): Huberman, A.M. ECRI (Exemplary Center for Reading Instruction), Masepa, Plains.
Perry-Parkdale (NDN): Miles, M.B. EBCE (Experience-Based Career Education), Perry-Parkdale, Midwest.
Plummet (IV-C): Goldberg, J.A. Bentley Alternative Education Center, Plummet, Southwest.
Proville (IV-C): Goldberg, J.A. (Vocational Intern Program), Proville, Southwest.
Tindale (IV-C): Taylor, B.L. Tindale Reading Model, Tindale, Midwest.

*Although the analysis and writing for this volume was carried out by Huberman and Miles, its quality ultimately depends on the twelve site reports. We wish to express our strong appreciation for the energy, care and determination with which Beverly Taylor and Jo Ann Goldberg approached their work as site researchers; we know from our own experience with four sites just how much work was involved.

work, initial implementation, the sorts of assistance provided, and the results of later implementation.

Implementation always brought about changes to some degree — in the innovation itself, in those who used it, and in the school and district as organizations. Chapter V discusses these "transformations," and offers systematically-derived explanations as to why they occurred.

Then we move in Chapter VI to the question of outcomes, showing how much final change occurred in terms of stabilized use of the innovation, spread of the innovation throughout the school and district, degree of institutionalization ("built-in-ness"), impact on students, improved teaching capacities and changes in teachers' and administrator's careers. Here too we seek for causal explanations.

The final chapter provides a reflective, integrated summary of the study's findings.

Readers, like researchers, vary. Some want a complete and thorough warm-up on a study's aims and methods, right at the start. Others are impatient to get to the story, the substantive findings. For clarity, we provide background here on reasons for the study, our sample of sites, how we collected data, the conceptual scheme underlying our work, and our data analysis methods. The reader aching for substance can skim this section, or skip to the Summary (p.25) and move on from there.

Background

Reasons for the Field Study

Our field study was designed to complement data from the survey component of the Study of Dissemination Efforts Supporting School Improvement. Survey methods, using both interview and questionnaire data, can provide rapidly-collected, systematic data that are comparable across a large number of representative school districts; such data can be easily machine-processed and analyzed with descriptive and inferential methods. But such an approach also carries with it a set of limitations: pre-designed instrumentation, one "snapshot" pass at the site and its informants, difficulties in unravelling the longitudinal process by which innovations are adopted and implemented, and the discovery of unanticipated or equivocal findings which cannot be resolved within the data set itself.

To compensate for those inherent limitations, we designed a field study for a subset of 12 cases within the larger sample of 146 sites, drawing on ethnographic methods. Ethnographies typically entail a detailed, long-term descriptive account of individual and social behavior in a bounded cultural context (a village, a family, a school). The strength of this approach lies in the continuous and unobtrusive presence of a researcher who observes naturally-occurring events in a setting, and gradually isolates the characteristics of the individuals and the setting which appear with regularity and which exert a directional influence on behavior. These "organizing contexts" can then account for the ways in which local actors make sense of their own and others' actions, can reveal what matters most to actors in the setting, and can adequately explain how and why these actors respond to changes in their everyday environment. Such an approach can be adapted readily to the study of a local school as it creates or responds to changes in its curriculum, administrative structures or working arrangements. Ethnographic methods are seeing more and more use in education (cf. Mulhauser, 1975; Wolcott, 1975; Wilson, 1977; Goetz and LeCompte, 1981).

Ethnographic methods are also valuable for their flexibility: one can compensate for weaknesses in survey designs by progressively reconstructing data-gathering methods in response to site characteristics, by making several passes at key informants, by observing the chaining of events over time, and by resolving ambiguities or puzzles as they emerge.

We designed the field study component to strengthen and complement the survey component by:

- identifying typical patterns of outcomes and relationships which were obtained at local sites, i.e., "telling the story."
- identifying the causes or determinants of the process by which new practices were generated, adopted, implemented and, in some cases, institutionalized.
- validating or at least giving persuasive plausibility to findings derived from the survey's cross-sectional analysis.
- aiding with the interpretation of puzzling, equivocal, or non-obvious findings from statistical analysis of survey data.
- illustrating relationships which emerged from the analysis of cross-sectional data, through documented instances.

As it turned out, the field study also complemented the survey component in several other ways. First, there was its orientation or focus. The survey leaned toward identifying the characteristics of innovations and program types and strategies which accounted for successful implementation outcomes; the field study component focused more on the everyday, taken-for-granted properties of the site and how they changed, and were changed by, the process of implementing new products and practices.

Secondly, the tendency of survey respondents to give an "official," non-controversial or disinterested rendering of the implementation process could be countered by focus during field work on latent issues, agendas and outcomes: career enhancement, personal mobility and the achievement of other assorted individual and group interests. For example: 87% of innovation users said on a survey item that they were using the innovation because they "wanted to," not because they "had to." That figure was clarified considerably through close-up interviewing in the field study. We found that administrative pressure was a strong fact of life in innovation adoption for nearly two-thirds of all users ("I didn't know I had a choice to refuse. The principal asked me to do it, and that's it.") And a range of still other motivations was reported:

> It will look good on my resume. (Teacher, Calston site)
>
> I took the training for recertification credit. After all that I had to follow through. (Teacher, Masepa site)
>
> It sounded like an interesting idea and I'd never written curriculum before. They were going to pay me for the summer, which is always important. And I had free time. (Teacher, Tindale site).

Third, fieldwork also uncovered the site-specific effects of salient events unconnected to but affecting the innovation process, such as teacher strikes, central office intrigues or impending legislation. Finally, survey analysis could only look discretely or additively at interactions among the innovation, the properties of the site and the characteristics of key actors; the field study could look at these interactions over time as a series of transactions or institutional negotiations, resulting in changes in the innovation, in the practices of teachers and administrators and, in some cases, in organizational structures or procedures.

In brief, we wished to complement the standardized, extensive, snapshot nature of the survey data with context-respecting, intensive, longitudinal data from the field study. The strengths of each approach could complement the weaknesses of the other.

To realize these hopes, it was necessary to relax the constraints on the conduct of classic ethnographic research. A "classic" ethnography could only have been carried out at 3 - 4 sites, thereby defeating the purpose of getting a reasonable match with the diverse traits of the larger population of 146 schools. Trading off depth of inquiry against generalizability, we selected a stratified sample of 12 schools, each to be visited for a total of 8 - 12 days during the school year, along with intermittent telephone contact.

We also could not afford to be fully inductive, as in the classic ethnography. We pre-specified a general conceptual model underlying our work (see p. 17) and derived from it a set of 34 systematic research questions that would guide our local inquiries, while still leaving us open to "what the site had to tell us." The research questions appear in Appendix A.

The field study was thus an integrated multiple case analysis, using techniques of non-participant observation, informal and structured interviewing and document review. On balance, the data collection methodology lies closer to the domain of intensive investigative reporting (cf. Douglas, 1976) than to that of traditional ethnographic fieldwork. Our data analysis methods, many of which we invented during the course of the study, represent, we believe, advances over currently-used methods of qualitative data analysis (Huberman & Miles, 1982); we explain them more fully below.

Choosing our Sample of Sites

The choice of the 12 sites was dictated by two general concerns. We wanted sites that would be roughly representative of the larger population of 146 sites in the survey sample. And we wanted a diversity of sites which were at different points in the implementation process, enjoying different rates of success and posing different implementation requirements at the classroom and school levels.

In order to meet these criteria, the final sample varied along the seven following dimensions: program sponsorship (NDN/IV-C), geographic region (Northeast, Midwest, Plains, Southeast, Southwest); setting (rural, small city, suburban, "urban sprawl," center city; year of initial implementation (1976 through 1979); current status (ongoing, expanding, dwindling), program types (see p.11), and program content. Characteristics of the final sample are given in Chart 1, next page. Several comments are in order. For program sponsors, we chose only NDN and IV-C, to enable cross-program comparisons within our sample, and to focus on the issue of locally-generated (IV-C) vs externally introduced (NDN) innovations. Our sample includes 9% of NDN sites in the larger study, and 21% of the IV-C sites.

Our sample fits well with that of the larger study on the counts of region and setting. We used "urban sprawl" to refer to

Chart 1: Characteristics of Field Study Sample

		SITE CONTEXT		ASPECTS OF THE INNOVATION				
SITE	PROGRAM SPONSORSHIP#	U.S. REGION	SETTING	YEAR BEGAN PROJECT	STATUS (as initially assessed)	PROGRAM TYPE	PROGRAM NAME OR INITIALS[x]	PROGRAM CONTENT
ASTORIA	NDN	Southeast	Small city	1978	Expanding	Add-on	EPSF	Early Childhood
BANESTOWN	NDN	Southeast	Rural	1979	Expanding	Pull-out	Catch-Up	Reading/Math
BURTON	NDN	Midwest	Suburban	1979	Expanding	Add-on	IPLE	Law and government
CALSTON	NDN	Midwest	Center city	1978	Ongoing	Drop-in	Matteson 4D	Reading
CARSON	IV-C	Plains	Rural	1977	Expanding	Add-on	IPA	Individualized educational planning*
DUN HOLLOW	IV-C	Northeast	Urban sprawl	1977	Dwindling	Add-on	Eskimo Studies	Social studies*
LIDO	NDN	Northeast	Rural	1976	Dwindling	Add-on	KARE	Environment
MASEPA	NDN	Plains	Rural	1978	Ongoing	Drop-in	ECRI	Language Arts*
PERRY-PARKDALE	NDN	Midwest	Suburban	1977	Ongoing	Sub-system	EBCE	Career education
PLUMMET	IV-C	Southwest	Center city	1976	Ongoing	Sub-system	Bentley Center	Alternative school
PROVILLE	IV-C	Southwest	Urban sprawl	1977	Dwindling	Pull-out	CEP	Vocational education
TINDALE	IV-C	Midwest	Urban sprawl	1976	Ongoing	Drop-in	Tindale Reading Model	Reading

# NDN = National Diffusion Network
IV-C = Title IV-C

x IV-C program names are pseudonyms, to avoid identifying specific sites.

* Program is used in this site with a comprehensive sample of learners, rather than with low-achieving or marginal populations.

outlying - but non-suburban areas near large cities, where Midas Muffler shops and McDonalds' hamburgers are rife.

Considering year of implementation, we wanted to see projects that were at different points in their life history, since we believed that core issues, site dynamics and outcomes would vary accordingly. We were able to include two first-year projects (Banestown and Burton); they were added to the larger survey sample.

The project's developmental status, as assessed by survey research staff, also seemed important. In most cases their judgments were correct (though it turned out that work at Masepa, believed to be "ongoing", was in fact expanding throughout the district, and that Proville, which was supposedly "dwindling", had in fact discontinued the innovation.

We expected that program type would make different sorts of demands on sites during the implementation process. We defined four, and were able to sample them representatively. A drop-in program often involves the substitution of new materials (ex: reading, math) that can often be easily incorporated into practice by users. A pull-out program often takes the form of a resource center or remedial lab, where pupils go from their regular classroom. Add-on programs enrich the regular curriculum with new content and activities, sometimes including experience outside of school. Finally, sub-systems are more-ambitious attempts to create semi-autonomous programs, usually with their own space, curriculum, staff and students. Note, by the way, that most of the programs we studied entailed few organizational changes; they were mostly modest, manageable, content-oriented efforts.

The content emphasis appears in the last column of the chart. We found after constituting the sample that at least half of the projects were addressed to low-achieving or marginal student populations. That tends to be true for the total IV-C and NDN project population as well.

We considered some additional sampling dimensions, but discarded them as less promising, and as making systematic comparisons more difficult. They included: degree of assistance required to implement the program, degree of developer prescriptiveness, school level, district stance toward innovative programs (cautious/energetic), and impetus for program adoption (from the building/from the central office). All these dimensions were, of course, attended to during data collection and analysis.

Using seven sampling dimensions for 12 sites makes it likely that any given site will be unique in its sampling profile. How to generalize with validity? There is reasonably good similarity between our sample as a whole and the survey population; beyond this we should note that the meaningful sampling unit is probably episodes, events occurring during adoption, implementation and institutionalization, rather than "sites" as such. We had dozens of such "treatment" episodes, enough to make for good within-sample analysis, and sample-to-survey comparisons.

Site access. Once the site had agreed to become part of the larger study, and had had survey staff visits for interview and questionnaire data collection, we mailed a letter to the building principal, explaining that we wanted to include the site in a more-intensively-studied sample of 12. An accompanying handout (Appendix B) explained our working objectives and procedures, reviewed ground rules of confidentiality and anonymity, and outlined major categories of research questions. It also suggested possible benefits of participation in this intensive study (the usefulness of reflection on the process of implementation, and summary reports from us).

We followed these materials with a phone call to arrange an introductory site visit, with the understanding that final confirmation of our working relationship would be reached at the end of that visit. Most sites had few reservations about our presence, probably because they had already agreed to be subjects of study for the larger project. In a few cases (ex: Masepa) the principal simply agreed to the entire idea on the telephone. In one case (Carson) there was a good deal of initial hesitancy, resolved after the first site visit.

One site, a suburban district in the Northeast, in the process of implementing an NDN comprehensive language arts program (ILA), decided not to participate after our initial visit. Teachers were quite resentful of the recently-mandated program, and the principal and reading coordinator felt that our continuing presence would exacerbate implementation difficulties. We withdrew, and replaced the site with another Northeast NDN site (Lido).

Data Collection Methods

The main corpus of data was generated from field notes taken during site visits spaced throughout the school year. During and after the site visit, the researcher dictated a full account, drawing from the field notes; these were transcribed as a "write-up," and later coded. Some visits were scheduled to correspond with a decisive event on the site (district office meeting, staff planning session, visit of external consultants or trainers). A site was typically visited 3-4 times for 2-3 days, with interim contact by telephone. We collected data through interviews, on-site observations and documents relating to the project or institution.

Interviews. These were of two sorts. First, we used a semi-structured interview (Appendix C) developed after early site visits, with a schedule covering the principal research questions.

The interview had items like:

> "What were you doing before you came here?"
>
> "What was this school like, before [the innovation] entered the picture?"
>
> When you first heard about [the innovation], what did you think it might be like to use it?"

Second, we had many informal interviews, in empty classrooms, hallways, teachers' lounges, cars, cafes, offices and homes. The questions depended on the person at hand and the state of our knowledge, and ranged widely:("How come you decided to take that new job?"; "I heard that some people resent the way the decision to try the program was made. Is that so?"; "Was that meeting yesterday a typical one?"). Informal interviews (really talks, discussions, chats) often yielded additional "backstage" information about users'* views of the innovation, relationships within the school and the actions of building and central office administrators.

Observations. These were typically unstructured, though the researcher often had specific things s/he was looking for. They took place in settings ranging from steering group meetings to the principal's office to classrooms and playgrounds, and resulted in written-up field notes like these:

> Paul [sup't] went on to what was apparently another standard procedure: reviewing the items from the last meeting, on which action decisions had been made, to see if everything was OK. Very rapid fire. "Pancake tickets, OK. Furnace duplex, OK. Drivers, emergency people? Peggy, Arnie, and Wendy will be willing to help." (Field notes, Carson site).
>
> Lucille [turnkey trainer] starts with the directives---Read, spell and read, proof and correct (3 times) sound and read, make a sentence, read the sentence

---

* "User" means persons directly involved in carrying out the innovation with students. These were usually teachers, but also roles such as aide or program coordinator.

> on the transparency, etc. I notice that she is almost literally snapping out the instructions. Not maliciously, but somewhat mechanically. (Field notes, Masepa site).

Documents. Whenever a piece of paper that looked or sounded significant came to our attention, we asked to look at it, and/or to have a copy made. Our sites varied considerably in their attention to documents. Some sites had notebooks four inches thick for each year of the program; in others the paper trail was almost non-existent. We abstracted the content of each document, and noted its significance. For example:

> Daily report of absences, and activities announcements (high school).
>
> Significance: note that details of excused absences are given at a very micro level——implies close control, knowledge of students, sanctions for non-excused absences.
> (Document file, Carson site)

Survey data. We also examined data collected from the 12 sites by the survey researchers, including taped interviews with users and administrators, user and administrator questionnaires, an external agent interview and questionnaire, building work climate questionnaires, configuration checklists for the project and for users, Level of Use rating sheets, and demographic information sheets for the building and district.

Field researchers used a variety of verification procedures to assure the credibility of their interview data, including cross-checking informants' accounts with other informants, matching interview data with observations, matching interview data with survey data, careful sampling of informants (main actors, a variety of users, non-users, dissidents, former program personnel, pupils, users and administrators in other buildings) and, occasionally, more confrontational devices, such as challenging the account of events given by an informant.

Details of data collection effort and methods for the 12 sites are given in Appendix D.

Our Conceptual Scheme

Initial flow model. Before we began data collection, our study design contained a dynamic model of the implementation process. The model (see Fig. 1, next page) includes six variable sets, which interact over time to produce three types of outcome. In the model, the adopting school is seen as a "host" or active recipient of an innovative program (one that is new to the school, at least initially), and of assistance tied to the program. The contextual press from the surrounding community and district office also has impact within the school. (In several instances, for example, changes in statewide legislation were funnelled into the school through the central office and connected to an innovative program designed to work in the direction of the mandate.)

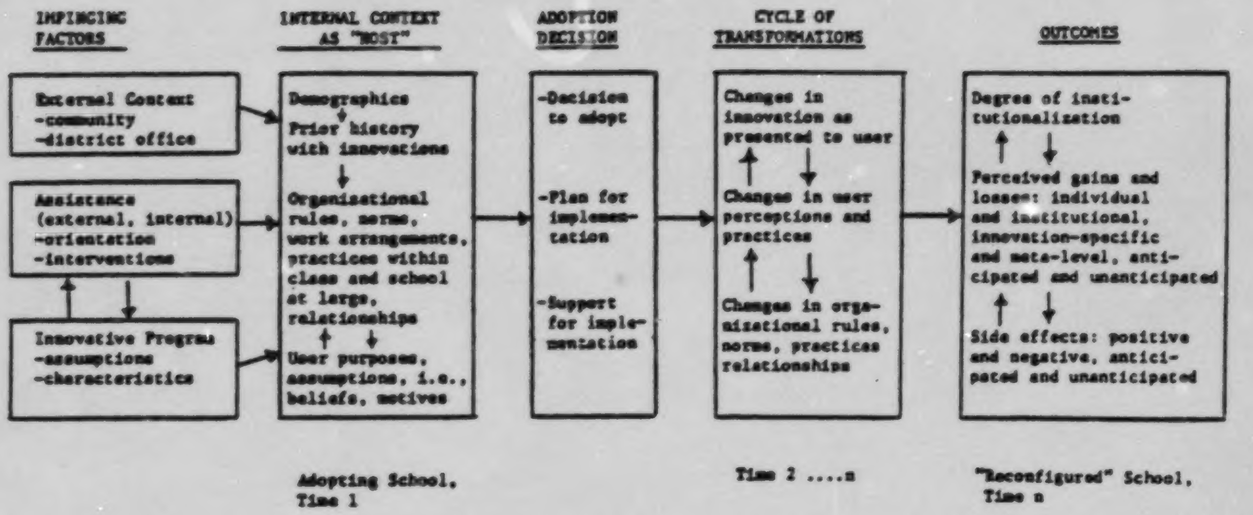
The adopting school, then, assimilates the innovative program as a function of its demographics, prior history of innovative practices, organizational practices, procedures and norms and user purposes and assumptions. The decision to adopt, and a preliminary plan for implementation and support services, follow from a series of negotiations-often tacit-between district administrators, school personnel and developers or advocates of the innovative program.

During early and later implementation, users interact with the new program under existing organizational arrangements. Through a series of accommodative transformations, the innovation is adjusted through user and organizational pressure (for example, its parts are

Fig. 1

Field Study Conceptual Flow Chart

(Initial Version)


IMPINGING FACTORS
INTERNAL CONTEXT AS "HOST"
ADOPTION DECISION
CYCLE OF TRANSFORMATIONS
OUTCOMES
External Context
-community
-district office
Assistance (external, internal)
-orientation
-interventions
Innovative Programs
-assumptions
-characteristics
Demographics
Prior history with innovations
Organizational rules, norms, work arrangements, practices within class and school at large, relationships
User purposes, assumptions, i.e., beliefs, motives
-Decision to adopt
-Plan for implementation
-Support for implementation
Changes in innovation as presented to user
Changes in user perceptions and practices
Changes in organizational rules, norms, practices relationships
Degree of institutionalization
Perceived gains and losses: individual and institutional, innovation-specific and meta-level, anticipated and unanticipated
Side effects: positive and negative, anticipated and unanticipated
Adopting School, Time 1
Time 2 ....n
"Reconfigured" School, Time n

simplified, bent in various ways, left out, or supplemented). Implementing the innovation also changes users' perceptions and practices (for example, they become more skilled at individualization, feel closer to students, understand mastery learning methods better). And implementation also brings about organizational shifts (for example, when projects entail cross-age grouping, cross-disciplinary teams of teachers, new evaluation procedures or redelegations of authority).

The model assumes that these transformations produce distinct outcomes, most perceived as gains and losses at the individual and institutional levels. These outcomes may or may not (note side effects) correspond to those specified by program developers; many may also have been unanticipated.

In a later iteration of this model, six outcomes were specified in more detail:

- Stabilization of use: the degree of practice mastery and "settledness" of the new practice in users' instructional repertoire.
- Percentage of use: the number of users in a school or district in proportion to the number of eligible or possible users.
- Institutionalization: the degree to which the innovation is "built in" — incorporated into the ordinary structures and procedures of the school and its surrounding district.
- Student impact: achievement, affective and behavioral changes in students as a result of exposure to the innovation.
- User capacity change: changes in users' knowledge, attitudes or skills which are of general professional value, beyond the immediate innovation's requirements.
- Job mobility: movement of school personnel to new positions either inside their schools or districts (down, sideways or up), to new positions outside their districts, or out of education altogether.

In short, our study was driven by the idea of following out the contextual consequences of an innovation in a school setting. We did not aim to look at all innovative behavior in our schools.

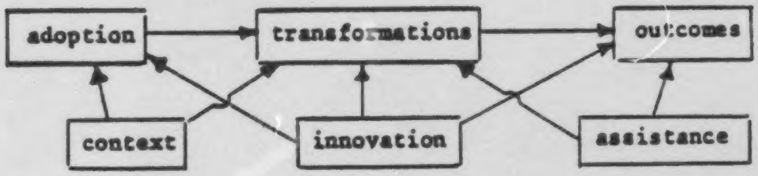
Research questions. We used the model to generate a list of 34 research questions, each with sub-queries. They covered six main categories:

Characteristics or properties of the innovation
The context of the school as a social organization, prior to implementation
The adoption decision
Site dynamics during implementation
Role of internal and external assistance
Outcomes and reconfigurations in school practice

The complete set of research questions appears in Appendix A.

Recasting the model; list of core variables. As we began moving toward final analyses of the events and processes in each of our sites, we re-examined and recast the relationships among the boxes of the initial flow chart, as shown below:

Fig. 2 Revised Flow Model



In brief, we saw contextual features as influencing adoption and the transformations occurring during implementation. The nature of the innovation itself affected adoption, transformations, and the eventual outcomes; and the assistance provided was important in affecting transformations and outcomes. We also posited a causal flow from adoption to transformations to outcomes.

As we worked on our causal analyses for each site, we gradually developed a total of 31 "core variables" within the 6 boxes of the model, from our original research questions, and from what turned out to be important in our sites. These variables would enable us to make systematic comparisons across all 12 sites, as we struggled with the task of comparing the 12 "causal networks", which were qualitatively-derived path analyses The 31 core variables are organized according to *antecedent* or start variables existing before the implementation process began, *mediating* variables occurring during implementation, and *outcomes*. Here we simply list them without further explanation; their meaning will become clear as we proceed.

Table 1: List of Antecedent, Mediating, and Outcome Variables

ANTECEDENT OR START VARIABLES	MEDIATING VARIABLES	OUTCOMES
Internal funds	External funds	Stabilization of use
Career advancement motivation	Program adoption (NDN)	Percentage of use
Assessed adequacy of local performance	Program concept initiative (IV-C)	Student impact
Environmental turbulence	Program development (IV-C)	User capacity change
	District endorsement	Institutionalization
	Building endorsement	Job mobility
	Influence of innovation advocate	
	Implementation requirements	
	Adequacy of initial user preparation	
	Program-district fit	
	Program-building fit	
	Program-user fit	
	Assistance	
	User commitment	
	User skill	
	Program transformation	
	Teacher-administrator harmony	
	Validation effort(IV-C)	
	Stability of program leadership	
	Stability of program staff.	
	Organizational transformation.	

Final recasting of the model. As might be expected, the process of cross-site analysis that resulted in this volume led to one more iteration of the model, with a number of new variables added to the 31. It will have much more meaning to the reader once our findings are clearly in mind. It appears on page 315.

Data Analysis Methods

As we have pointed out elsewhere (Huberman & Miles, 1982), methods of qualitative data analysis are not well codified, and are often left vague or implicit in research reports. We want to provide enough clarity about our methods to be reassuring, without drowning the reader in arcane methodological detail.

We were naturally concerned about developing descriptions and explanations that could be reasonably comparable across 12 diverse sites, produced by four different field workers/analysts. The first solution to this problem has already been described: the set of research questions, keyed to the interview schedule we used during later field work.

Secondly, working from the research questions, we developed an exhaustive list of codes, which we could use to categorize and sort events and statements in our field notes. These codes were of two sorts. Descriptive codes were used in the margin of field notes to characterize a "chunk" of the notes. For example, the code AP-MOT (adoption process—motives) was applied to this piece of the Tindale field notes:

> I asked him what the need for the new program was, and he responded that the students coming into the 9th grade were two years below grade level, and that the old curriculum was ineffective. Through testing (The Nelson Reading Test) it was determined that students were growing academically only five to six months during the ten-month school year.

---

* The reader with strong methodological interests should consult Huberman & Miles (1982), and the various appendices we refer to here.

The second kind of code——actually, a meta-code—was explanatory. Such codes emerged from our experience with the sites, and usually were leit-motifs (repeated themes), or causal explanations of outcomes offered by site people or emerging from our own musings. For example, the explanatory code CL-EXPL (causal link—explanation) was applied to this segment of the Banestown field notes:

> But he [Mr. Walt] says that he does not know that much about what is exactly involved in the Catch-up program. He thinks that "it is a combination of a lot of things." The resource lab appears to be used in the morning for the FACILE program, which Mr. Walt knows a great deal more about....In the afternoon, Mrs. Hampshire uses the lab for Catch-up purposes. Mr. Walt says that this is a different program, and therefore it is a different use.

This apparently innocuous statement, we learned very early in our Banestown contacts, reflected a long and acute power struggle between two factions in the central office, in one of which Mr. Walt was active. The CL:EXPL code was applied to other instances of this struggle, using the subhead: "teams" to signify factions. The CL-EXPL code was also applied to many other causal links, with appropriate sub-heads.

For a complete list of our codes and their definitions, see Appendix E.

A field researcher typically coded each set of transcribed field notes before returning to the site. Researchers attended in particular to explanatory codes which our discussions showed were emerging at other sites, with an eye to cross-site comparability. Our coding system stabilized fairly soon after the first round of site visits, so a minimum of back re-coding was required.

Writing case reports. Before proceeding to the cross-site analysis reported in this volume, we needed to understand dynamics in each site thoroughly, and to have basic data for the site available in one place. We wrote up the data from each site as a case, using a common framework. The case structure included the following sections:

- Overview/abstract of the site report.
- Geographic and contextual features of the community, school district and adopting school.
- Organizational chart showing key actors, authority relationships, stance towards the innovation, users and non-users. (For an illustration, see Appendix F.)
- Description of the data base (numbers of visits, interviews, observations, documents, phone calls, size of corpus of notes).
- Brief chronology of events, including "event listings" for each phase of the innovation process (a specimen event listing is given in Appendix G)and a chart showing the progression over time in numbers of users or pupils (See Appendix H for a specimen growth gradient).
- Responses to the full set of 34 research questions, including for each a statement of the findings, a display of data backing up the findings, (typically in matrix or tabular form), and an assessment of confidence in the findings.
- Event-state network, showing the principal events transpiring at the site and connecting them to the "states" (of the school, or of key individuals) which resulted in the course of implementation. (An event-state network is shown in Appendix I).
- Causal network, using the 31 core variables, plus site-unique variables in a path-analytic flow from antecedent variables to mediating variables to outcomes (see Appendix J for an example, with associated text).

In assembling the site report, researchers retrieved pertinent material by scanning the body of field notes for appropriate codes. Coded segments were then collected, and analyzed. In most cases, coded material was reduced to short phrases and inserted in the appropriate cell of a descriptive or analytical matrix; most of the responses to the research questions are contained in matrix or diagram form (see pp. 87 and 139-40 for examples of site-level data displays.)

Methods for cross-site analysis. Given a thorough understanding of what had happened at each site and why, we needed to develop integrated, well-founded generalizations. What patterns of variables, or families of sites, could we see, and what general causes seemed to be at work? The data-reductive and data-displaying devices in the site reports were an immense help. Each section of the site report contained one or more graphs or matrices that boiled down the data for careful review. The 12 graphs or matrices could be extracted from the site reports, and compared for common and contrasting profiles.

Our usual way of proceeding was first to assemble a descriptive "meta-matrix," which displayed data from all 12 sites on a particular issue. For example, Chart 9, page 87, shows a meta-matrix with data on "initial assessment of the innovation." Looking down the columns of the meta-matrix helped us draw generalizations about what was important, across sites. Then we typically developed another type of meta-matrix, a predictor-outcome matrix, where we could array the sites by high to low amounts of some variable, such as rough or smooth early implementation. Chart 14, on page 130, is an example. Using it, we could see, for example, that sites trying innovations that caused a good deal of change in users' practice had a rougher time of it, while sites with minor changes had a smooth start.

The third step in our analysis was often the creation of a cross-site causal network, showing a comprehensive explanation that seemed applicable for all sites. For example, see Fig. 11 on page 309, which shows our explanations of what led to greater amounts of organizational change in our sites as a result of the implementation effort.

The causal networks developed for each site were also useful in cross-site analysis. We were able to sort them into "scenarios" where causal dynamics were similar. For example, Fig. 40, page 397, shows an example of the "weak commitment" scenario, where the indifference of administrators ultimately leads to a very low amount of final student impact.

Summary. We designed the field study using modified ethnographic methods that would provide intensive, longitudinal data, drawn from the contexts of 12 school sites. The sites had a wide geographic range, and varied in their community settings, how long they had been implementing the innovations, and in type of program. Seven were NDN-sponsored, and five were working with Title IV-C funding. We collected data during 3-4 visits of 2-3 days each, using semi-structured and informal interviews, observation, and available documents. Survey data from the larger study were also available.

Our conceptual model, which generated 34 focused research questions, emphasized the initial effects of the local context, the properties of the innovation itself, and the nature of assistance provided to sites as affecting a process which began with adoption, proceeded through "transformations" in the innovation, the people, and the local school organization, and resulted in outcomes ranging from "stabilization of use" to student impact and job mobility of local personnel. Our conceptual model evolved and developed over time as we learned more about site dynamics, and provided the basis for coding field notes.

Data analysis continued with the preparation of 12 structured site reports, each with tables, charts and narrative text focused on the research questions. Our cross-site analysis, which is reported in this volume, used cross-site matrices---large charts displaying data from all 12 sites---to develop generalizations, culminating in "causal networks" that gave systematic explanations of the implementation process and its outcomes.

CHAPTER II

TWELVE BRIEF CASE HISTORIES

Here we offer brief capsule accounts of what happened in each of our sites. The aim is to provide a warm-up, and an integrated account to serve as a base for the cross-site analyses that follow.

Early Prevention of School Failure
Mitchell Elementary School
Astoria, Southeast

> I give the over-all direction. How EPSF is implemented is determined by the local school. (Coordinator of Curriculum)

Astoria is a seaport that has retained much of its patrician 18th Century architecture. It is primarily a middle to upper middle class community, with residents from the upper levels of the military hierarchy, and the state government, and professionals who commute to a larger urban area some 40 miles away.

Mitchell, as a parochial primary school, draws from the more affluent and educated social membership of the city. The student population typically scores above state means on achievement batteries; teachers characterize pupils as privileged and academically motivated.

In 1977, at the request of principals from the 97 schools in the parochial regional district, a post of curriculum coordinator was created in the district to review existing content areas, with the aim of outlining a unified curriculum. A special committee was activated to study kindergarten-level programs. One of the programs studied, Early Prevention of School Failure (EPSF), available through NDN, was recommended to the curriculum coordinator by the NDN State Facilitator; it was this program which the committee recommended. Shortly thereafter, the district superintendent called for district-wide, mandatory implementation of EPSF in all kindergartens and in first grade classes of schools without kindergartens, as was the case at Mitchell.

EPSF requires careful testing of incoming children, then providing intensive individualized remedial work in speech, language, audition, motor coordination and socio-emotional development. After initial training in March, 1979, the Mitchell team of first-grade teachers was impressed with the kindergarten program, but questioned its suitability for their first grade pupils, most of whom had already achieved the program's objectives. These doubts remained discreetly within the school. The staff proceeded dutifully with the initial screening/diagnostic batteries in May, but found that the pupils weakest in the five components of EPSF were already scheduled for supplemental assistance under Title I. To use EPSF as designed, it was felt, would be superfluous and would entail reorganizing the entire basal program. As a result, with the approval of the Vice-Principal, substantial adaptation ensued. The implementation procedure consisted of dividing up the components and farming remedial work out to volunteer teachers and teacher aides, outside the classroom, with minor reinforcement of the existing first-grade curriculum. There were virtually no modifications in ongoing classroom practice.

Three months after the 1979-80 school year had begun, all but one or two of the participating first-grade pupils had completed the EPSF program. The curriculum coordinator, having visited the school, was pleased with the results. The program is now written into the district curriculum. At the last site visit, Mitchell was preparing its screening procedures for the new cohort of first graders.

Project Catch-Up
Banestown, Southeast

> I don't know. Maybe we got into it too fast. Maybe I should have slowed down a little. But I told /the teachers/ "You just start going when you feel ready and let me know what you need." (Elementary supervisor)

Banestown is a rural, conservative town lying in a chain of small towns and villages separated by homesteads running through a picturesque valley between two mountain ranges. Education is an important, but not essential component of social and cultural life, which revolves around farming and livestock. The district office is perceived as conservative and loosely administered, although, at the elementary level, a small group of dynamic women vie for visibility and influence.

As is the case throughout the state, district schools feel the hot breath of a state-mandated program to meet minimal competency levels in the "basics." District officials were thus alarmed in the fall of 1978 when they learned from a delegation of fourth grade teachers that some 40 percent of their pupils were from one to three grade levels behind, and would not normally be graduated to the two local middle schools. Officials began to look around for solutions, and learned of an upcoming NDN awareness fair, at which they discovered and immediately adopted a pull-out remedial lab using a variety of commercial materials for intensive daily work in reading and mathematics. Groups are small, averaging five pupils for each lab teacher and aide. Skills are broken into small components, which pupils progressively master on a schedule of near-complete success, with systematic positive reinforcement.

Initial training and preparation were extremely rapid; the lab was operational and funded four months after the 1978 awareness fair. The program was then extended to the two middle schools and to two other elementary schools in the fall of 1979. At the target school, the formula was perfected during the second year, although one crucial component—regular coordination with classroom teachers—was not put in place. There were central office factions struggling for power, and the original innovation advocate lost control over the program, moving back into a secondary role.

Testimony from lab teachers, classroom teachers, students and central office personnel was positive; initial analyses of test scores showed clear gains in reading and mathematics. Lab teachers also reported a number of personal capacity changes following the experience of mastering an individualized diagnostic-prescriptive instructional program.

Unexpected budget cuts from both county and external sources were announced in May, 1980 for the following year. Through budgetary manipulations at the district office, Catch-Up was temporarily salvaged under a transitional soft-money arrangement, requiring the reassignment of lab teachers and shifts in the pupil population. Its longer-term future is uncertain.

IPLE (Institute for Political and Legal Education)
Burton, Midwest

> I don't view this year as implementation. It's more experimentation, letting teachers try out some of the activities and approaches in the program, with no pressure from me. I'll help any way I can, but it's up to them right now. Next year will be implementation. (Social studies coordinator)

The Burton district lies in a sprawling suburb outside a major urban center, where land goes for $20,000 an acre. The population is of mixed ethnicity, with WASP , Italian, Polish, Mexican-American and black families, and ranges widely in social class from professionals to welfare recipients. A new superintendent is attempting to jostle what has been a rather traditional district by rotating administrators into new jobs; three of the four high school principals are new in their jobs, and there is a new director of instruction.

In 1978, after a social studies needs assessment, the central office coordinator for social studies began searching for a legal/governmental program, and located IPLE, which was appealing because of its active learning approach. He got state funds for an awareness workshop; with the interest that that developed he got district encouragement to seek IV-C funds to support training and materials for an adapted version of IPLE for the district.

IPLE is an NDN-brokered social studies program that gives high school students practical experience and understanding in political, governmental and legal processes, with units on voter education, government at the state, county and local levels, and individual rights. It stresses knowledge and skill acquisition, via active student participation, both in the classroom (role plays, games) and in the community at local and state agencies.

The ultimate aim is to give students the chance to initiate and carry out projects that affect the community positively.

Burton received funding for IPLE materials and training in September 1979. A workshop for all social studies teachers took place in October. Potential users were told they had the option of experimenting with the materials--or ignoring them. Most ignored them. Four teachers at three different high schools used portions of the materials, with one integrating a good deal of the classroom materials into his existing curriculum. But no user engaged students in community activities, a feature seen as essential by the developer.

IPLE is marginal in the schools and district, being treated so far as an optional supplement. The coordinator hopes to get portions of it written into the social studies curriculum through committee work that began in the spring of 1980. Some IPLE users are on these committees and might support that hope. But Burton is a traditional district, with many traditional, high-seniority teachers. The most likely scenario is that some of the more familiar, easily-integrated classroom actities will be written in to enliven teachers' lectures, and that the idea of community activities will not appear at all in Burton teachers' practice. IPLE has certainly not been seriously implemented at Burton, much less institutionalized.

Individual Planning Approach
Carson, Plains

> We were so damn excited, we would have a meeting at six in the morning, or start at four, and go to seven, eight or nine p.m. We thought we really had it. Measureable outcomes would happen. (Counselor)

> Everything in the program is looking good, but it has to be implemented...There are many loose ends. Many teachers are still grappling with implementation. (Program Coordinator)

> It would only disappear if there were a change of administration from top to bottom, and/or some community dissatisfaction. Now if you had to choose between IPA and football, that would be a different matter. (Teacher).

Carson is set in a major river's flood plain west of a large city. It is really three communities; old-time town residents and those farming corn and wheat, working-class people in a decaying riverside village, and wealthy, commuting professionals in a new resort development.

The school district, which contains only one elementary and one high school, has changed a great deal recently. In 1975, a new, humanistically-oriented superintendent was hired to improve a system seen as conflict-ridden and stagnant. Most respondents felt that his hiring of new principals and teachers, together with his style, ideology and practices, led to a more innovative, considerate, collaborative and student-oriented climate.

In 1976, a teacher and a counselor, with support from the new high school principal and superintendent, and strong help from an external consultant, initiated work on the program that came to be called IPA. Essentially, it took a highly-individualized approach to student needs, interests and career intentions. It includes diagnostic testing of students; three-way conferences among parents, teachers and students; the development of individualized growth plans; and special activities ranging from trips to observatories to units on dinosaurs to the visit of a famous football player. The whole project has a full-time coordinator, is steered by a teacher-administrator Management Team, has been carefully evaluated with the aid of the same external consultant , and is approved for dissemination throughout the state.

Early volunteer users had much enthusiasm for the program, and worked intensely with it. But the decision to mandate the program for all teachers in the third year brought less-committed teachers, students and parents, and the program was simplified, and less fully implemented. It became, in effect, a set of "enrichment" activities for younger students, and a course-advisory system in the high school. The coordinator's work load of evaluation and "validation" activities meant that she could not supply as much assistance to users as they really needed.

Even so, the IPA program seems to have increased teacher awareness of students as individuals and as family members; to have changed some classroom practice; and to have increased student achievement, self-concept, attitudes to school and friendliness. Organizationally, it brought about changes such as the Management team structure, new scheduling, systematic in-service work, and more elementary-secondary interaction. Carson was probably the site that changed its organizational functioning most among our 12.

By the spring of 1980, IPA was moderately well institutionalized and would probably survive the departure of the coordinator and the high school principal, who had taken new jobs. As one teacher said, "Even done poorly, it can't go wrong."

Matteson 4D Reading Program
District 5, Calston, Midwest

> The beauty of the program was that there was an excellent correlation between the strands of the [existing] Calston reading program and 4D...it seemed to me that in the hands of the right teachers this would do it...(District Coordinator of Instruction)

> You almost feel penalized for wanting to increase your professional activity. If you are going to implement a new program, you have to suffer the consequences. (Teacher)

The Calston sub-district is located in a large midwestern city nine miles from the affluent lakeside section. The community is predominantly white, multi-ethnic and blue collar, with older, well maintained two-story brick residential dwellings. As is typical of this area, the neighborhoods are flanked by major boulevards lined with small businesses, grocery and hardware stores. The demographics of the community are changing, as upwardly mobile Latinos are integrated into the predominantly white population.

The growing bilingual population had made it difficult to maintain and upgrade reading scores within the district, a source of concern for local teachers and administrators who operated under an accountability system in which salary "merit" increases were tied to reading achievement scores. In 1976, the district coordinator of instruction attended an NDN fair in Calston, where she discovered Matteson 4D, a drop-in, individualized reading program for students at normal ability levels in grade 4-8. The program's appeal lay in its stress on word attack skills and appreciation of literature, areas in which district schools had been performing poorly. In addition, Matteson 4D correlated well with the ongoing language arts curriculum.

During the following year, the coordinator invited two district principals to look over the program at another NDN fair. Both expressed interest. In September, 1978, each principal had recruited teachers in her respective school; in-service training was held in October at the district office.

Implementation was not smooth, owing to delays in the arrival of materials, to teacher role overload from other new programs, and to illness among program staff. Gradually, requisite materials arrived and teachers settled into progressive mastery of the program. With one exception, teachers were enthusiastic, although none was certain of the program's effectiveness, and all felt that administrative support and assistance had been inadequate.

In its second year, the program continued to receive endorsement from district office personnel and school principals. Its continuation, however, has been compromised by a recent budgetary crisis within the Calston school system. Because of the crisis, the advocate of the program at the district office has been reassigned; two of the three current users may not be rehired due to low seniority; and the third is considering a job outside public education. Further dissemination of Matteson 4D, originally planned, has been curtailed. More budgetary cuts are expected. Program continuation is uncertain.

The Eskimo Peoples' Culture Curriculum
Dun Hollow Area School District, Northeast

> The curriculum took too much work, and while I enjoyed putting meat on the bones, it just got to be too time-consuming. I'm suspicious of the Eskimos trying to sell material to the district that they haven't even created yet [to get state funding]. And most of all I'm annoyed with the ESC [Education Service Center]. They stopped asking and started saying, "You will prepare a lesson, you will evaluate each lesson..." (Teacher)

The Dun Hollow Area School District is located just ten miles from the commercial and industrial center of a large city. Its nearly all-white population is divided among six different municipalities: three lowland working-class towns and three in the hills, two being upper middle class, and the other poor and rural. The district--and school--population ranges from corporation presidents to miners and welfare recipients, and a subgroup of Alaskan Eskimos.

In 1976, the Council of Still Waters Eskimo Center moved its headquarters to the immediate proximity of a Dun Hollow elementary school. This was the impetus for the design and field test of an Eskimo-American culture curriculum in the winter of 1978.

The Eskimos first approached the state regarding the problem of stereotyping and worked subsequently with a local intermediate educational center's curriculum unit with IV-C funding. The resulting project was designed as a drop-in supplement to a social studies curriculum, with the aims of (a) eliminating stereotypes and (b) increasing the knowledge of the history, customs and current practices of Alaskan Americans. The units included printed material supplemented with transparencies, cut-outs, drawings and slides to be used by the regular classroom teacher.

The field test "decision" appears to have been slid into, rather than firmly made. Only the developer, based outside the district, advocated use of the program. Initial training was cursory, as were implementation and evaluation workshops. Revisions of the materials, which were judged as poor and excessively demanding, were based on teachers' input. But the changes were described by district personnel as inadequate and disappointing.

Over the three years of its existence, the program only involved three users, in two schools. It did have some impact on participating teachers, who spent time and energy developing materials and activities. Administrators, on the other hand, tended to ignore the program and its users' troubles, and appeared increasingly disenchanted with it. All respondents, with the sole exception of the superintendent, leaned toward non-adoption of the program, beyond the field test, unless it were written into the regular social studies curriculum. The program is unlikely to be continued.

KARE (Knowledgeable Action to Restore our Environment), Lido, Northeast

> A program like this should be more than
> just happy faces in the woods, and busy hands.
> (Teacher)

The Lido school district is located in a small, oceanside town midway between two large seaports. The town is one of the six wealthiest in the state, and is mostly WASP. Several years ago Harrison Park was given to the town by the granddaughter of its namesake, and a committee was established to oversee its maintenance. This park provided the setting for an off-campus science program begun by a science teacher before KARE funds were available in 1976.

Operating with considerable support from the high school principal, the teacher developed a marine biology course that utilized Harrison Park; the course also received the support of the superintendent because it helped to alleviate the overcrowded conditions at the old high school, by getting students out of the building and freeing up space. In the following year, two science teachers created an off-campus forestry/ecology program. Through NDN, they chose to adopt KARE, essentially as a means of expanding the off-campus programs by providing the needed finances to purchase equipment and supplies, and getting training in hands-on discovery-oriented instruction for one of the science teachers.

The KARE program consists of inter-disciplinary learning activities that encourage students to confront real environmental problems, such as water pollution and air contamination, in action-oriented tasks outside of the classroom. Booklets give many ideas for activities and teaching techniques, and it is intended that teachers select what they want from the program materials. In other words, KARE is not a full-fledged, step-by-step curriculum; it is an approach to teaching that can be used with many different courses and subject matters.

Funds of $6100, received in the summer of 1976, were spent by the two science teachers on tools for building their own equipment, sampling kits, instruments for measurement, and materials. Training was limited to an initial three-day workshop, and was effective in motivating the teacher who was unfamiliar with the teaching approach. There was one follow-up visit the next spring and several phone calls throughout the year between developers and program users. Users also conducted several environmental workshops for other districts on the hands-on approach.

A change in high school principals and the move to the more spacious new high school led to reduced administrative support for the off-campus program. The program went from a popular option for high and low achievers to a shrunken dumping ground for discipline problems. There are a total of three users, although one of them did not use the program this year, due to a scheduling mixup causing the cancellation of the marine biology course. Each off-campus course has space for 14 students, the number that a mini-bus can transport to sites.

The program is not central in the school or the district, though it enjoys community support. The teachers themselves are committed to off-campus programs, and KARE "made it all possible." There is considerable discontent in the science department, based on the current lack of administrative support, poor salaries, and lack of recognition. The principal and the "lame duck" superintendent had extremely limited knowledge of the KARE program and less interest in discussing it, though they both considered it would be around in its present form for a "couple of years." The fate of the off-campus program, and KARE within it, depends upon whether or not the science teachers stay in education, the policies of the new superintendent, and whether the principal will become more accommodating.

ECRI (Exemplary Center for Reading Instruction)
Masepa, Plains

> [ECRI] was something, especially in the first years, but it wasn't any big thing. And everything was positive about it; that helps...Most of the vibes have been real good. But it was nowhere near the investment of time it takes to negotiate one contract with a teacher. (Assistant superintendent)

> All those cards, all those definitions, having all my sentences ready, having all the materials ready, placing them in groups, there was a whole lot there. I didn't see how I was going to get it all done. (Teacher)

Masepa is a small, relatively poor city of 14,000, lying in the middle of a massive, unfertile plain stretching across the central and eastern parts of the state. The local economy derives from dirt-farming, small-scale industry, local and federal civil service and a large meat-packing plant on the city's outskirts. The city is culturally active, with a multitude of service clubs, adult education programs and cultural events. Education, in particular, seems to be an important and well supported sector in Masepa.

The chronology of events stretches from 1975 to 1980. After an initial exposure to ECRI at a national NDN conference, the curriculum coordinator arranged for an awareness session in Masepa. There followed a "miraculous" pilot implementation by a local teacher who then teamed with another teacher and the curriculum coordinator to disseminate the program throughout the district.

ECRI is, the words of its developer, a "highly regimented and task-oriented behavior modification teaching strategy." As an integrated language arts curriculum, it provides teachers with highly scripted instructional sequences in word recognition and comprehension, study skills, spelling, penmanship, dictation and creative writing. The program runs all morning in three successive 'cycles': a drill cycle, an independent pupil work cycle and a 'back-up' or review cycle. It represents a near-total modification of instructional practices by users.

The 17 teachers who first implemented ECRI in 1977-78 were beset with problems of inadequate materials and lack of initial preparation, yet reported positive results. Some 13 additional teachers implemented the following year, extending ECRI from grades 2 through 7. As support improved and the number of volunteers rose, the central office decided midway in the year 1979-80 to mandate the program.

One of the six elementary schools, Humphrey, was quick to spread use of ECRI across grade 2-6, under the supportive but pressure-exerting direction of the principal, who returned from ECRI training a strong believer in the merits of the program.

Most local and district teachers find ECRI effective but overly prescriptive. Their continued use comes from perceived results, from the generous provision of on-site technical assistance and of instructional materials, and from sustained, teacher-responsive central office support for the program. The experience of implementing ECRI proved to transform teachers' practices more than was the case in any of our twelve sites, and organizational changes were substantial as well.

EBCE (Experienced-Based Career Education), Perry-Parkdale Schools, Midwest

> You can do things on your own. The teacher is not breathing down your throat. The staff is fantastic, they care..Here you learn stuff you really need to know. It prepares you to go out there. (Student)
>
> It's hard to swallow, not having control of the kids. Here your basic trust is your control. (Staff member)
>
> It's a good program. It works for kids, parents like it, employers like it.......but senior high school principals are very autonomous and very powerful here. [He] is not sure we should be the delivery system for career learning. (Program director)

The Perry-Parkdale school district lies in a lower middle-class suburb in a sprawling urban area, twenty miles from a large city. Most residents work in the city at a nearby automotive plant; the economic picture is currently grim.

The school district is known for "hustling", getting a quarter of its financial support from Federal and other soft money grants, but its administration is currently in a state of turbulence and turnover.

Driven by state mandate and by a sensed need for improvement in local career education offerings, central office administrators sought out and adopted an NDN-available version of Experience-Based Career Education, a work experience program which brings students directly into the world of work and seeks to improve not only job knowledge but also skills of self-assessment and decision-making. Students spend the majority of the school day in the program, working on basic skills, "life skills" and "life competencies" (e.g., income tax forms), and carrying out independent learning projects at job sites. The program also brought the district some $300,000 in extra funds over three years through Vocational Education Part D auspices.

Training and materials were received from the Northwest Regional Educational Laboratory, adapted with minor changes to the Perry-Parkdale setting. There was good central office support, but weak endorsement by school principals and counselors. The program was implemented with fidelity to the NWRL model, but drifted towards a population of lower-performing, more alienated students. There were also drifts toward greater routinization, lesser individualization, more achievement emphasis and increased control over students. Although it established a modest niche for itself, the program brought about little change in the two sending high schools, from which it remained isolated. The program also received IV-C funds for dissemination purposes in the state.

By late 1980, the program appeared to have been reasonably effective in aiding its 60-70 students to connect with the world of work, to stay in school, to become somewhat more mature and to communicate more freely with adults. It was, however, not well institutionalized. District support for 1980-81 was to be cut to 25 students and one staff member plus an aide. This outcome was attributable to weak endorsement by building principals and counselors, and was exacerbated by acute financial pressures (declining enrollments, staff cutbacks and the end to external funding for the program).

Bentley Alternative Center for Education
Plummet Union High School District, Plummet, Southwest

> In a way we got into a partnership with the Plummet Union High School System. We told them we needed help with the kids and that we were willing to help with funding if they handled the kids. We would be the pipeline that would provide the student population. The District would set up the program and we would back out. (Probation department officer)

> We've been allowed to operate autonomously. We've been allowed to experiment. (Teacher)

Plummet, a rapidly growing sunbelt city, lies on flat desert plains. In the southern and central areas of the city, one commonly encounters poor Indian and Mexican families strolling or lounging in public areas, a reflection of the city's original inhabitants. Moving northward, one sees evidence of the flight of the city's affluent middle and upper middle class to newly-completed tract homes and condominiums. The Bentley Alternative Center—the "innovation" created through IV-C and other funds—lies in a lower-class, industrial section of Plummet, surrounded by a scrap-metal yard, low-income homes and a collection of industrial plants.

In 1975, leaders of Plummet youth service organizations met to express growing concern over the district drop-out rate (13.2%) and the increasing number of referrals of high school students to juvenile courts. From this and a subsequent conference emerged the concept of a "transition school" for hard-core dropouts, with the goal of returning adjudicated adolescents to their regular high schools within 90 days. Strong backing came from the local school board, courts, the superintendent of schools and the probation department. Initial funding of $300,000 came from the department of court services through LEAA; the school system

provided the facility, equipment and materials, and additional funds were raised through CETA, special education and Title IV-C.

A project director was hired in June of 1976, and proceeded to recruit a staff of 15 teachers and counselors with experience in alternative or experimental schooling for drop-outs. Initial implementation of the new school in 1976-77 was uneven, mainly because of continuous shifts in the student population. The school underwent a series of reorganizations and redirections in the two succeeding years, ending up with three departments (academic, general education and "life skills") corresponding roughly to the three subgroups of its student population. These shifts were managed under a loosely structured, collegial administration, headed by a charismatic director. At the end of the second year, the school survived the skeptical scrutiny of the budgetary review committee which foresaw the imminent end of external funding.

Still another reorganization was underway in the fourth year of operations, as the notion of an "alternative" rather than "transition" school hardened. While the budget has been picked up by local district monies, there are substantial changes in orientation and in school management likely as a result of the departure of the director and the probable replacement of program staff.

The Career Experience Program
Proville Unified School District
Proville, Southwest

> Just another dumb program they were trying to shove down our throats. (Principal)

> Jack Tweed [sup't] was getting old...they would do what he said when he said it, but it was a different story behind his back. (Program coordinator)

> There were so many places where the program could go wrong. There could be problems with the principals, the voc. ed. teachers, the classified personnel and the students. I recall Coles [coordinator] getting a lot of static from the teachers about scheduling and that classified personnel weren't given enough training. (Central office project writer).

The population of Proville is predominantly made up of conservative, white-collar middle and upper-middle class suburbanites, many of whom were drawn to the area through jobs with aerospace engineering firms. The city has expanded rapidly in the last ten years as a result of the population shifts and economic growth characteristic of the Southwest. Three of Proville's four high schools were built within the past ten years to meet its expanding student population.

In 1975, an industrial arts teacher at one of the high schools conceived of a plan to provide vocational education seniors with on-the-job experience in the school district itself, under the supervision of certified employees. The teacher conveyed his concept to the superintendent who, the following year, offered him the administrative position of Coordinator of Career and Vocational Education and encouraged him to develop and implement what came to be known as the Career Experience Program.

Through the intervention of the superintendent, initial funding was provided by the local school board, then through a first-year operations grant from Title IV-C. The new funds allowed the district to hire a full-time project director and to expand participation to 100 students per year.

In September, 1976, principals of the four high schools, along with vocational education teachers and directors of maintenance and personnel, were informed of the program and asked to identify students. Initial recruitment was low (16 out of 281 eligible students), ostensibly because class schedules had already been established. In the second semester, 32 students were recruited. From the start, however, both principals and teachers had felt pressured to participate in a program in which they had little interest, and which some perceived as a district office initiative with the aim of providing jobs for the superintendent's "loyalists."

In the second year, 1977-78, CEP lapsed for six months when the project director left the district. The new director attempted to reduce building-level resentment and to clarify implementation procedures. Participation increased modestly.

During the third year, the original developer moved up to a more senior position in the district office and the new program director became coordinator of career and vocational education, with many tasks other than CEP. Though up to 40 students got involved, most of them came at the urging of a single teacher in one high school; everywhere else CEP was ignored. By year's end, the project was completely terminated, with some minor segments included in the special education program.

Tindale Reading Model
Tindale School District, Midwest

> We *had* to succeed because the program wasn't leaving. If it didn't work, the people would have to leave instead. *We* were supposed to change. (Teacher)

The two target high schools are located in a sprawling suburb of a major urban center. Tindale has a melting pot population divided into ethnic pockets, and a 60 percent minority (Black and Hispanic) student population. Reading achievement had dropped to an average of two levels below grade, which led the district administration to mount a reading program development effort for the high school level.

Using IV-C funds, a new set of courses, the Tindale Reading Model, replacing the old basic English curriculum for the freshman through senior years, was designed by three local administrators: the director of curriculum and two English department chairs, They selected teachers to write the curriculum and other teachers to implement it.

The Model starts with the freshman year (where it includes math fundamentals and general science) and goes through the senior year, aiming at remediating reading skills through linking reading, graphics, composition and language structure. Students completing a level successfully are often "mainstreamed" back into regular classes.

Heavy monitoring and evaluation was used to keep teachers on track and to discourage deviation from the prescribed curriculum. One teacher characterized changing an objective as a "moral sin" and changing an activity as a "venial sin." Users first experienced a loss of freedom, resentment and stress, but gradually reached a level of tolerance if not comfort with the model, noting that no preparation was needed and that most of the practical bugs had been eliminated.

The Model is currently being used by 29 teachers in three disciplines (English, science and math) at Tindale East High School and has a "settled in" feeling. There has been measured improvement in student reading skills and attitudes toward reading. During the fourth year of implementation (1979-80), additional Title IV-C funds were received for disseminating the program to other schools in the state.

CHAPTER III

BEFORE IMPLEMENTATION

The twelve short stories just presented provide a general idea of the course of the implementation process and its varied outcomes. Before we return to the details of implementation in more depth, we should describe the school contexts—the where of implementation—and the innovations—the what. Here is a short summary of the contexts in which implementation was to take place, and of the innovations which were about to enter, or be developed in, those contexts.

As we shall see, the general picture is of middle-class, moderately innovative districts, working in fairly stable environments to implement what turned out to be non-trivial innovations, for an increasing percentage of the student population. There were, of course, many specific exceptions to these general trends.

The Local Contexts

Structural Properties

A look at Chart 2 gives a clearer picture of our sample. The Chart assembles information on aspects of the local school contexts that we call "structural." These include the geographic area and the setting; the size of the district (as indicated by number of schools, and number of pupils); the number of schools and pupils involved in adoption at the beginning of the process, and later on; and the socio-economic level of students in the district and the schools.

Some general comments may help the reader draw meaning from the Chart, and avoid information overload. As we have already noted, the distributions on geographic area and settings are fully representative of the range of sites

Chart 2: Local Contexts: Structural Properties

SITE	GEOGRAPHIC AREA	SETTING	NUMBER OF SCHOOLS IN DISTRICT	NUMBER OF PUPILS IN TARGET SCHOOLS	ADOPTING SCHOOLS		PUPILS INVOLVED		SES LEVEL	
					START	END	START	END	DISTRICT	SCHOOL
ASTORIA	Northeast	Small city	1 elementary 1 jr-sr HS (both parochial)	270-Mitchell	10(in Archdiocese)	92(in Archdiocese)	70	70	middle to upper middle	middle to upper middle
BANESTOWN	Southeast	Rural	3 elementary 2 middle 1 high sch'l	850-Smithson 215-Carington 550-Banestown middle	1	4	30	95	middle to lower middle	middle to lower middle
BURTON	Midwest	Suburban	12 elementary 5 middle 4 high sch'ls	1150-Queen HS 1100-Taylor HS 1138-Burton HS	3	3	4 classrooms	6 classrooms	upper middle to lower	upper middle to lower
CALSTON	Midwest	Urban center	25 elementary & jr. highs 4 high sch'ls	500-Lylas 500-Reston	2	2	4 classrooms	3 class rooms	lower middle	lower middle
LIDO	Northeast	Rural	1 elementary 1 middle 1 high sch'l	585-Lido HS	1	1	4?classes 56?students	2 classes 28 students	upper middle to lower middle	upper middle to lower middle
MASEPA	Plains	Rural	6 elementary 1 jr-sr HS	247-Jefferson	6	6	17 classrooms	36 classrooms	middle to lower middle	lower middle to lower
PERRY-PARKDALE	Midwest	Suburban	22 elementary 4 hr. high 2 high sch'ls	2300-Aldrin HS 2300-Perry HS	2	2	32	50	lower middle to lower	lower middle to lower
CARSON	Plains	Rural	1 elementary 1 jr./sr. HS	314-Elementary 354-High sch'l	2	2	60-65	668	upper middle to lower	upper middle to lower
DUN HOLLOW	Northeast	Urban sprawl	7 elementary 2 jr. high 1 high sch'l	380-Tortoise Area 283-Carr	2	2	2 classrooms	2 classrooms	upper middle to lower	upper middle to lower
PLUMMET	Southwest	Urban center	11 high sch'ls	550-Bentley	1	1	228	550	lower middle to lower	lower middle to lower
PROVILLE	Southwest	Urban sprawl	13 elementary & jr. HS 4 high sch'ls	2100-Endroses HS 1900-Elencots HS 250-Elburroes HS ?-Vacville HS	4	0	16	0	middle to upper middle	middle to upper middle
TINDALE	Midwest	Urban sprawl	17 elementary & jr. HS 2 high sch'ls	3090-East 3250-West	2	2	9 classrooms (Tindale East only)	29 classrooms (Tindale East only)	middle to lower middle	East-lower; West-lower middle to lower

SES: underline shows majority level, if present

BEST COPY AVAILABLE

in the larger study. District size, as indicated by number of schools,[*] too, shows a substantial range, from the two schools in rural Valley to the 30 in suburban Perry-Parkdale. The adopting elementary schools tend toward the small: most are under 400, with the exception of the two Calston schools and one Banestown school. The high schools show a very wide range in size, from Carson's 354 to the 3250 in Tindale West.

Across all sites, the number of adopting schools began at an average of 3.0, and moved to 9.8. But those figures are bent substantially by the mandated district adoption in Astoria's parochial system. If Astoria's figures are removed, the averages are 2.9 schools at start, and 2.9 at the end of our study: no net shift. However, the number of pupils involved does increase markedly: if we use an arbitrary figure of 25 for each classroom, the start mean is 116.4 pupils, and the end mean is 280.1, so increased spread is occurring within schools.

Finally, district SES levels range substantially, as this table shows:

Table 2: SES Levels of Districts in Sample

Mainly upper middle	1-	Lido
	2-	
Middle	3-	Astoria, Proville
	4-	Burton, Masepa[#], Banestown, Dun Hollow, Carson, Tindale[#]
Mainly lower middle	5-	Calston, Perry-Parkdale
	6-	Plummet
Lower	7-	

[#] Masepa school was lower middle to lower; Tindale schools were (1) lower; (2) lower middle to lower. Other school levels, identical with district.

---

[*] This measure of district size correlates quite well with the measure used in the larger study (total number of students in district), since we have no examples of the "consolidated" rural district, with few schools of large size.

Note that the districts at (average) position 4 on the scale include some with a full SES range (UM to L)---Burton, Dun Hollow and Tindale---and others with a narrow range (M to LM)---Masepa, Banestown. We have no districts that are predominantly lower-class, though we do have one such school (Tindale East).

Summary. The size of districts, and of the high schools we studied ranged very widely. Most of the elementary schools were small. On the average, about 3 schools per district were using the innovation, and the number of students involved showed a substantial increase over the implementation period. Though the socio-economic status of students varied widely within and across districts, the most frequent levels were middle to lower-middle.

Functional Properties

We also wanted to know how our sample's districts actually functioned or operated, before and during implementation. Here we picked a series of variables that seemed like obvious, plausible things one might like to know about a district just launching an improvement effort. They included: what the accountability set-up was like; where the innovation's advocates were located; what the history of innovation was like in the district and target schools; and the degree of environmental turbulence present. We also noted other salient district-specific characteristics that did not fall in these categories.

Chart 3, which shows the data, is even more complex than Chart 2, and we do not encourage more than browsing in it, unless the reader is voracious for background data. Rather, we will summarize the main trends in the Chart, and leave it for later reference, In seven districts, the accountability pattern is traditional or "classic": teachers report through building principals to central office curriculum specialists. But in five others the picture is different: in Burton, Banestown and Tindale the line goes directly to the central office, bypassing the principals either officially or unofficially (Banestown). In Perry-Parkdale and Plummet, the innovation was a separate sub-system, with direct accountability to the district office. We should note that even in the "classic" districts, there is, practically speaking, a good deal of decentralization, also known as "loose coupling" (Weick, 1976).

The early advocates of the innovation tend to be (in 10 of 12 sites) in the district office; they are sometimes accompanied by teachers (5 sites), building principals (2 sites), or people in external agencies (3 sites). During later implementation, the pattern is similar, except that, as might be expected, more building administrators become advocates (4), and in two sites new roles (helping teacher, reading advisors) come into play.

As far as past innovative history is concerned, most districts have at least a moderate past interest in new programs; only four districts qualify as low, and there are six that are moderate-high to high. However, the picture at the building level is much more traditional: six sites of our twelve are low or low/moderate, and none at all appear on the moderate-high to high end of the scale. This finding is congruent with the more vigorous presence of central office people as advocates.

Chart 3: Local Contexts: Functional Properties

SITE	ACCOUNTABILITY	LOCATION OF INNOVATION ADVOCATES		INNOVATION HISTORY		ENVIRONMENTAL	OTHER SITE
		EARLY	LATER	DISTRICT	BUILDING	TURBULENCE	CHARACTERISTICS
NDN							
ASTORIA	Classic, centralized, but vice principal has high *de facto* control and autonomy	District office curriculum coordinator State facilitator		Low	Low	Low	Highly centralized, disciplined administration. No state aid.
BANESTOWN	Program staff reports directly to district office; building admin. is bypassed	District office: elem. supervisor, reading supervisor		Low	Low	High in 1979-80	Conservative inbred community. Loose district control; internal power struggle 30% Title I pop. Much external fund seeking. State accountability pressure.
BURTON	Departmental "building reps" report directly to district office coordinator; principals uninvolved in curriculum	District office -- Social Studies Coordinator		Past; low Recent: mod. to high	Low	Low	New supt; many job shifts, new programs, curriculum overhaul.
CALSTON	Classic: teachers report to district office coord. via bldg. admin.	District off. curric.coord.	Dist. off. bldg.admin.	Moderate	Mod/ low	High in 1979-80	Innovativeness driven by accountability system Funds tight, (district ineligible for poverty $).
LIDO	Classic supt. through HS principal to dept. chair to teachers	HS principal	Teacher	Low	Low/ mod.	Low	"Lame duck" sup't. Tight financial picture. Tight high school space; available off-site facility.
MASEPA	Classic, decentralized; bldg. admin. has high *de facto* control	District off. teachers(2)	Dist. off., bldg. admin. "helping" teacher	High	Mod.	Low	Strong community emphasis on service/education Good school-district relations--frequent communication. Many Title I children.
PERRY-PARKDALE	Separate sub-system; program director reports to district off.--building admins largely bypassed	Dist. off. prog. dir., teacher	Prog. dir., Prog. staff	Mod/ high	Aldrin HS: high Perry HS: mod.	High in 1979-80	High unemployment, enrollment declines. Many key relationships with state dept., univ.,other districts doing the program.
IV-C							
CARSON	Classic; close collaboration among supt, el. principal, HS principal & A.P. as team	Supt., HS principal, teachers, counselor	Supt, both principals, prog. dir.	Past; low Recent; high	Elem: mod. HS: high	Low since 1977	Influx of middle-class professionals. District has achieved substantial recent improvement. Small-scale, informal working style. Strong humanistic ideology.
DUN HOLLOW	Three units involved: schools, Eskimo Center, intermediate educational service center. Within district, classic accountability.	Intermediate unit (Educational service center), program developer		High	Mod	Low	Central office admins remote from school; wish to maintain relations with intermediate unit.
PLUMMET	Separate institution; director reports to district office	School Bd., supt., juvenile court, dept. probation	Bldg. admin. district office, juvenile ct. dept. probation	Mod.	N/A	High in 1979-80	High drop-out, juvenile crime rates. Collab. between courts, schools, CETA, Teacher Corps.
PROVILLE	Classic: Teachers report via principals to prog. dir. in district office.	Dist. off. (2), including supt.	Dist. off. (1)	High	ND	Low	Population expansion- 3 of 4 HS. built in last 10 yrs. Supt. as "godfather"--old boys' network in district office. Recession - shortage of outside jobs for students. Much external fund seeking.
TINDALE	Departmental chairpersons in sch'ls report directly to district office; building admins's bypassed	Dist. off. (2), dept. chairpersons	Dist. off. (1) dept. chairpersons, reading advisors	Low	Low	Low	Middle-class flight, ethnic pockets. Longevity of district admins--old boys' network. History of local teacher-driven curriculum development.

ND=missing data N/A= not applicable

BEST COPY AVAILABLE

Environmental turbulence is low in most (8) of our sites. During the 1979-80 school year, when we were at the sites, Calston was going through a city-wide budget crisis, Banestown and Perry-Parkdale had local budget cuts and loss of Federal funds; and Plummet was going through severe budgetary problems and reductions in force. So turbulence, where it exists, was primarily economic, not the result of community conflict.

We will not attempt to summarize the "other" characteristics----they will be reviewed more carefully in our later section on organizational change----but a scan down the column will repay the reader's curiosity, and underline the district-idiosyncratic nature of key contextual features ranging from old-boy networks to accountability pressure and "lame duck" superintendents.

Summary. The accountability structures in our sites were nearly evenly split between "classic" ones (teacher to principal to central office), and others where teachers were directly accountable to the central office, at least for purposes of the innovation. Not surprisingly, central office people were usually the early advocates of the innovation. Most of the districts had a moderate to high past innovative history; we are not talking about innovative "laggards". The school buildings, however, had a somewhat more conservative past history. Finally, most of the districts existed in a relatively stable, non-turbulent environment.

The Innovations

What sorts of innovations were destined to be implemented in the contexts we have just outlined? Chart 4 provides a capsule description of each, and describes some key properties:

Chart 4: The Innovations

SITE	INNOVATION TYPE	IMPLEMENTATION REQ'TS	POPULATION SUITED FOR			SOURCE RE USER SYSTEM	GENERAL DESCRIPTION OF INNOVATION
			SCHOOL LEVEL	ABILITY LEVEL	SOCIAL-PSYCH CHARS.		
NDN							
ASTORIA	Add-on	Moderate	Kdg.	low	N/A	Outside district	A developmentally-oriented, diagnostic-intervention program at the kindergarten level, with screening and daily remedial work (20-30 minutes) in speech, language, audition, motor coordination and emotional-social development.
BANESTOWN	Pull-out	Moderate	3-6	low	Withdrawn or disruptive	Outside district.	A diagnostic-prescriptive remedial laboratory using a variety of commercial materials for individualized r medial work in reading and mathematics. Daily (30-45 minutes) instruction focuses on graduated difficulty, instant error correction, positive reinforcement.
BURTON	Add-on*	Low/mod.	9-12	all	N/A	Outside district	A student-centered, participatory approach to learning about voter education, state government, and individual rights. Involves work experience and projects in local community. In-class procedures include simulations, role plays, and inquiry methods.
CALSTON	Drop-in	Moderate	4-8	all	N/A	Outside district	A teacher-managed, individualized supplemental reading program consisting of a series of learning packets keyed to 100 behavioral objectives. On-task time is divided between independent work on sequentially arranged skill cards and sustained silent reading.
LIDO	Add-on*	Moderate	K-12	all	N/A	Outside district	An environmental studies program stressing "hands-on", interdisciplinary projects in local communities; use "process education" and student-centered techniques, outside school space and schedule. Community members and agencies involved.
MASEPA	Drop-in	High	K-9	all	N/A	Outside district	A highly regimented and task-oriented behavior modification instructional program in language arts. Teacher are given scripted formats for work in word recognition and phonetics; pupils work independently through mastery tests in reading comprehension and vocabulary; composition is practiced daily.
PERRY-PARKDALE	Sub-system	Mod/high	9-12	low	"alienated", vocational track	Outside district	An individualized, community-based career education program consisting of work experience and three classroom-based components: basic skills, "life skills" (e.g. career decisions) and "life competencies" (e.g. income tax forms). Pupils work with minimal supervision in carrying out short-and longer-term projects at job sites in the community.
IV-C							
CARSON	Add-on	High	1-12	all	N/A	Within district, within schools	A program aimed at developing/implementing individualized educational plans for normal children. Based on student profile data, and 2-3 yearly teacher-student-parent conferences, learning goals and activities (both in school and community) are specified and monitored for each child. Steered by representative teacher-administrator group.
DUN HOLLOW	Add-on*	Low/mod	1-6	all	N/A	Outside district	A supplementary social studies curriculum designed to eliminate stereotypes and to increase knowledge of Alaskan American history and customs. Units include family living, dance and music, cross-cultural families, historical and contemporary tribes, arts.
PLUMMET	Sub-system	High	9-12	low	dropout delinquents	Within district	An alternative school for dropouts and delinquent youth, with the aim of re-integrating pupils into high school after 1-3 months of intensive, individualized remedial instruction, comprehensive student and parent counselling, and vocational training.
PROVILLE	Pull-out	Low/mod	12	low	vocational track	Within district, outside schools	A program providing vocational-track high school seniors with on-the-job experience for one day per week during one semester, under the supervision of a "trainer," i.e., a district classified employee who monitor and evaluates job performance. Students gain school credit and earn minimum wage.
TINDALE	Drop-in (quasi-sub-system)	Mod/high	9-12	low	N/A	Within district, outside schools	A comprehensive reading intervention program which replaces the basic English curriculum with remedial skill instruction through linear and visual (e.g. film) reading, linear composition, and identification of language structures and conventions. The program is implemented both in English classes and in the science-math curriculum

* These innovations could also be (and were) treated as displacing existing practice.

N/A = not applicable

BEST COPY AVAILABLE

the general type of innovation involved, the extent of its implementation requirements, the characteristics of the population it is suited for, and whether the innovation was externally or locally generated. As in the preceding section, we provide only a brief overview; issues of the innovation and how it changed during implementation are discussed in depth later.

Summarizing Chart 4, we note that implementation requirements are at least moderate for nine sites; only Burton's IPLE program, Dun Hollow's Eskimo curriculum, and Proville's CEP (work experience) program have low to moderate implementation requirements. (And, as we shall see, even these ran into implementation difficulties.) In brief, the innovations being attempted were usually not minor in terms of what they demanded of users. Some, like the Masepa implementation of ECRI, were tremendously demanding. The Plummet alternative school led, like many such efforts, toward staff burnout; the Carson system of parent-student-teacher conferences in individualized planning meant role change for everyone.

Implementation requirements cannot be easily deduced from program type: the heavy ECRI program at Masepa was a "drop-in," and "add-on" programs could be relatively easy to implement (Burton) or difficult (Carson), depending on how much they asked of users and administrators.

In terms of school level, the 12 innovations included five that were at the high school level, four at the elementary level, one kindergarten through 9th grade, and two that covered the full range from kindergarten or first grade through 12th grade.

In ability level, half the programs were defined as appropriate for lower-ability students; the other half had no restrictions. Four of the low-ability programs were also aimed at students with other, often associated characteristics---alienated, disruptive, dropping-out, or vocational-track students.

In terms of innovation source, all seven of the NDN programs, by definition, came from outside the adopting district. (That is, they had been developed by other school districts or agencies, and were being introduced by such "developer/demonstrators.") The picture for IV-C programs is not, however, the opposite. The Dun Hollow Eskimo curriculum was developed outside the "adopting" district, since the IV-C funds went to an intermediate educational service unit. And in Tindale and Proville, though the programs were "locally" developed "inside" the district, the work was essentially done at the central office level, so that the innovation was external to local schools. Only Carson and Plummet followed the classic IV-C pattern, where district and schools alike participate in program development.

We will not attempt to summarize the innovation description column, but suggest a brief reader scan, to see the complete range of what was being considered for implementation.

Summary. The innovations being attempted were not minor; most had moderately-demanding implementation requirements. They focused on the high school level (5) and the elementary level(4), with the three remaining aimed at both. About half the innovations were aimed at low-ability students. Nearly all the innovations came from outside the district, the school, or both; only two sites (IV-C) had locally-developed innovations with full school involvement.

NOTE: The next page, which includes Charts 3 and 4, can be torn out by the reader for use in reference as we proceed. It will help keep the identities of 12 diverse sites clear.

CHAPTER IV

THE IMPLEMENTATION PROCESS*

Now we turn to what happened as innovations came into school contexts. First, this chapter explores motives and attitudes centering around adoption of the innovation, and describes people's initial perceptions and assessments of the practices they would be implementing. Then in turn we examine the nature of early implementation, the assistance provided to users, and what later implementation looked like.

Adoption of the Innovation

Introduction/Overview of Findings

As our model indicates, educational innovations are not introduced into a vacuum. School people have gradually built up a history of relationships among themselves, and with the institutions they work in. Each educator builds on that history as a function of his or her personal set of goals and career trajectory. This process makes for a complex, sometimes tangled web of relationships initially invisible to the outsider. That web can be intensified or shifted when an innovation enters the scene. With the innovation often come added funds, possibilities for promotion, opportunities to resolve nagging problems, chances for professional growth, and revisions in patterns of institutional influence.

In interviews and observations at the field sites, we focused on making the web of relationships and motives visible. What were teachers' and administrators' main reasons for adopting the innovations? Why, how, and with whom did they get involved? Was there any relationship to their career goals? Were they initially favorable to or skeptical of the new practice? How central was the innovation to their day-to-day work in the classroom, principal's office or district office?*

---

* To enable the reader to follow more easily the discussion of the 12 cases, we have inserted an extra copy of Charts 1 and 4 at the end of the volume.

We will also review in this section the question of who advocated adoption and made the key decisions that led to adoption, along with a discussion of the relative influence of central office administrators, building administrators and teachers. Finally, we will survey the timelines at the 12 field sites from the moment when local staff first became aware of the innovation to the date of initial implementation.

In brief, we found multiple motives for adoption. Administrators wanted to improve instruction and management, and gain new funds. They often placed pressure on teachers to adopt the innovation; teachers complied, but also saw professional growth opportunities and enhancement of current practice. The innovation loomed large for many, and for at least half of people at the site, figured in career plans; they believed the innovation would help them maintain their jobs or move up. The actual adoption decision was usually made in the central office, with some consultation, and implementation usually proceeded forthwith.

Motives

In most cases, users'** and administrators' incentives for adopting the new practices were multiple. In particular, motives were often--but not always--linked to career plans, to the importance given to the innovation, and to initial attitudes towards it. On the next page (Chart 5) is an array of these themes for one of the field sites, Masepa.

---

*Most of these data are low-inference in character. That is, we recorded what people told us, after checking against what others were saying and with other things respondents did or said in subsequent interviews. In one case, however, that of career interests linked to the innovation, we often had to probe deeper or infer motives from the full set of remarks made by a respondent. Such inferences were also checked carefully against other sources.

**We define "users" as those staff members, usually teachers, who are directly involved in using the innovation with students. "Administrators" are defined as others (usually principals or central office personnel) involving in managing or aiding implementation.

Chart 5 Motives and Attitudes of Users, Non Users, and Administrators at Masepa

Early Users: 1977-78	Motives	Career Relevance	Centrality	Initial Attitude toward Program
R. Quint	Self-improvement: "To get better, I had to change"..."Maybe I wasn't teaching the best ways." Pressure: "They wanted us to do it." Social influence: "Everybody was saying what Gail's doing is great."	None - improvement of practice	High: "Biggest thing I've ever done that somebody else told me to do.	Neutral: "There wasn't any appeal. They said it worked so I was going to try it."
L. Bayois	Observation: Saw G. Herrist do it and "was impressed." Fit to personal style: "I like structure." Practice improvement: "looking around for a different way to teach reading" Novelty: "you get tired of always doing the same old thing."	Vehicle to turnkey trainer role: also became Title I Coordinator	High: "most important thing I've been involved with."	Favorable
Second Generation: 1978-79				
F. Morelly	Social influence: heard from several friends about program Opportunity, effort justification: "I took the training for recertification credit. After all that, I had to follow through." Pressure: "He (Woolling) is the reason we do it here. He's so enthusiastic about it."	None - possibly stabilizing her job at the school	High: "This is the only new thing I've done since I've been out of school...I had to invest so much."	Neutral, apprehensive
L. Brent	Social opinion, influence: "I heard how good it was." Pressure: "(Woolling) was really sold on it. They really want it in." Conformity: Most doing it or planning to in the school; "it's what's coming." Self-improvement: occasion to "keep growing"	None, possibly fear	High: "It's been a nightmare."	Unfavorable, once training began
Recent Users: 1979-80				
V. Sharpert	Obligation: requirement to obtain teaching post: "I didn't have a choice." Practice-improvement; complementing pre-service training	Ticket to teaching job in the district	High: "My first job"	Neutral, apprehensive
A. Olkin	Social influence: "heard it was good;"..."a good friend liked it" Pressure: "strongly encouraged" by Woolling and Dahloff Observation, modeling; saw G. Herrist "She really impressed me."	None: felt obligated by administration	High: "This was really the big one for me."	Neutral, mixed feelings
S. Sorels	Observation: "It was so good for my own kids...tremendous change in reading, spelling, work habits"	Ticket to full-time teaching position	High: "This was really a big step for me—a big move..[nothing else] as high as this in my career."	Favorable: "I was excited about it."
Non User				
C. Shinder	Relative disadvantage: "My program was better." Poor fit with personal style: "too scholastic...too programmed"	None	N/A	Unfavorable
Administrators				
K. Woolling Principal	Met need: "I was looking for a highly structured, skill-oriented reading program." Novelty, promise of practical improvement: intrigued by reading about mastery learning; wanted to see it in operation	None at first; later, appreciates the visibility	High: "Largest investment I've ever made."	Neutral, then favorable
J. Dahloff Curriculum Coordinator	Relative advantage, face validity of program: "well organized;" could be used for other subject matters. Social influence: "impressed" that outstanding teachers favored the program Practice improvement; beginning teachers ill-prepared in reading. "We didn't know what to do with them... They just had to learn on the job."	Another in a series of implementations	Moderate: "It was one thing among a lot of things I was working on."	Favorable
W. Paisly Asst. Superintendent	Social influence: "talked into it" by J. Dahloff	None	Low: "It was no big deal.."	Neutral

The chart gives us an idea of the web of local motives. Note first that users' motives (first column) are *multiple*, that *social influence* (ex: hearing about the success of a colleague) is prominent throughout, and that there are some *shifts* in responses between early and recent users—slightly more pressure to adopt is felt. (Multiple motives and increases in the administrative pressure exerted on later users were typical at our field sites. Often, early users were courted. Later, when the practice was being generalized in the school or district, there was more strong-arming.) Administrators' motives at the Masepa site were more functional; the practice *met a need* or *was an improvement* over present practices.

There were *career incentives* for three of seven users, and possibly for one administrator. The *centrality* of the innovation was high for nearly everyone, though it loomed less large for administrators more distant from the school. In terms of *attitude*, users were ambivalent about the program introduced at Masepa, because of its complexity (a totally new language arts curriculum), and the administrative pressure to execute it. Administrators themselves were neutral to favorable.

Finally, some of the local site dynamics around adoption of the innovation come through: the obvious *advocacy* by the curriculum coordinator, the *pressure* exerted on later users by the principal, the undercurrents of *resistance* reflected in the responses of the non-user and L. Brent.

Users' motives. With the profile from Masepa as a backdrop, let us survey the twelve sites as a whole. First, for users, here are the motives expressed for adoption of the new practice, in order of decreasing frequency.

Table 3: Reasons Given for Adoption by Users (N=56)

Reasons/Motives	Nos. of respondents mentioning item
Administrative pressure, constraint	35
Improves classroom practice (new resources, relative advantage over current practice)	16
Novelty value, challenge	10
Social (usually peer influence)	9*
Opportunity to shape projects	5
Professional growth	5
Gives better working conditions	3
Solves problems	2
Provides extra money	1
Total	86

*Seven mentions were from one site.

The table should be interpreted cautiously, since there are an unequal number of respondents at local sites. There was also some retrospective infiltration: respondents sometimes invoked incentives that came _after_ initial implementation. Some respondents gave two or three motives, others only one. Deeper probing often produced multiple motives. An example, including "novelty","extra money" and "constraint" is this:

> It sounded like an interesting idea and I'd never written curriculum before. They said I'd be teaching it in the fall and they were going to pay me for the summer, which is always important. And I had the free time. (Teacher at Tindale site.)

In other cases, there were several motives, but one _leit-motif_:

> I can add it to my resume. The children are learning more skills. I get to meet people like you (field researcher). That's about all. You grow - that's the answer. You grow. (Calston site.)

But with these caveats, what jumps out of the table is the degree of administrative pressure. This motive appeared in all 7 NDN sites and in 4 of the 5 IV-C sites. It was mentioned more frequently by later users than by pioneers. The lone site with all volunteers involved the creation of a new institution—an alternative school—in which all staff members had applied for a job.

Clearly, users are more targets than initiators. This interpretation also gets support from an analysis of the innovation advocates and key decision-makers at the 12 sites. At 11 sites, the primary initiators and decision makers were central office administrators, most often an assistant administrator for curriculum or the equivalent. At the 12th site, the school principal and department chairman were the prime movers. When school-level personnel were also active in adoption, they were almost always building principals and/or department chairmen. In only two of the sites were teachers with no administrative responsibilities active participants in the adoption decision.* It is worth noting, however, that of the 4 sites at which school-level practitioners (including departmental chairmen and teachers) were primary participants in the adoption process, 3 turned out to be the most successful projects in the sample in terms of outcomes attained and relative smoothness of project execution.

There were degrees of administrative pressure. In projects just under way, teachers reported that they were "strongly encouraged" to volunteer. One respondent put this concisely: "The principal wanted it in; we got the message." There was sometimes an element of seduction at this phase, but underneath it was the clear understanding that demands for compliance could not be countermanded. Below is an excerpt showing this between-role alchemy:

---

* We should note here that 87% of the 299 users surveyed by the larger study said that the innovation was something they "wanted to do" (as contrasted with "had to do.") Our data suggest that such "wanting" (a) involved many different motives, and (b) may often have taken the form of simply being willing to carry out an adoption decision made elsewhere.

> She (ass't superintendent for curriculum) was really excited about it; she really wanted me to take it. But I guess I really didn't have any choice. (Teacher at Banestown site.)

But just as frequently a new practice required--and got--compliance, even without an expressed order:

> I didn't know I had a choice to refuse. The principal asked me to do it, so that's it. She tells me she's got an intermediate program and that we are committed to using it. Can I say no? (Teacher at Calston site.)

Sites varied on the salience of the pressure. At one extreme was an NDN site (Astoria) where users only mentioned administrative pressure. As it turned out here, the innovation was later mandated in a similarly top-down mode, although in fact teachers were only using small segments of the practice. At most other sites, pressure was a dominant or frequent response, but not the only motive given. At only 3 sites was pressure infrequently mentioned. At one (Burton), the innovation was in its first year, and was regarded by administrators as a pilot. In the other two cases (Carson, Plummet), interestingly enough, there was a strong ideological theme driving adoption to which both administrators and teachers subscribed.*

Another noteworthy phenomenon in Table 3 is the low salience of problem-solving motives. Users were not saying that they expected the innovation to solve chronic or severe instructional problems, but rather that it had the potential to improve classroom practice—add resources, enrich curricula, work better than the practice they were using, and improve working conditions in the classroom. There was little evidence of a strongly-felt user need or problem driving adoption. Rather, the innovation looked like something "better", and was being supported by administrators---and so was agreed to in good faith.* Here again, users come through as consumers of the practice rather than as active agents. The brief phrases in the first column of the illustrative chart for Masepa (p.62) capture this general emphasis well.

---

*To some readers, the word "pressure" may mean coercion, and imply somehow that users would not have adopted the innovation, left to their own devices. We simply mean the direct exercise of administrative influence, pushing, energizing. As we have noted, teachers had many other reasons of their own for adoption----they were not just being pushed around from above.

The final set of motives in Table 3 can be loosely grouped under the rubric of professional growth. Respondents thought these innovations could counter professional stagnation through their novelty value, could stretch existing instructional repertoires, add to professional qualifications, and put teachers in the role of curriculum developers. Were these items grouped (challenge, opportunity to shape project, professional growth), they would exceed the frequency of practice improvement motives. This underscores the need to broaden perspectives when we look at incentives and rewards. Although innovations are supposedly often introduced for instrumental reasons—e.g., to improve achievement scores—they are not necessarily construed this way at the classroom level in our sample. For example, no teacher mentioned "achievement gains" as a motive for adoption. On the other hand, professional growth was a strong motive in many cases, and acted as a catalyst for the introduction of new practices which did, in fact, improve academic performance.

Administrators' motives. Table 4 on the next page shows the profile for administrators and repeats, for purposes of comparison, the users' distribution.

---

*This picture differs considerably from that proposed by Zaltman et al.(1973), who believe that a "performance gap" or unsolved problem of some sort drives the adoption decision. As we shall see in a moment, such a relatively rationalistic justification for adoption may be present for some administrators, but the Table 3 data suggest its irrelevance for users.

Table 4: Reasons given for Adoption by Administrators, and Comparison with Users' Reasons

Reasons	Responses of Administrators (N=41)	Responses of Users (N=56)
Improves classroom instruction	21 (51%)	16 (29%)
Improves school capacity	10 (24%)	—
Solves problems	7 (17%)	2 (4%)
Access to funds	6 (15%)	1 (2%)
Improves teacher capacity	4 (10%)	5 (9%)
Administrative pressure	4 (10%)	35 (62%)
Helps meet goals, follow philosophy	3 (7%)	—
Enhances own professional image	3 (7%)	—
Meets external demands	2 (5%)	—
Increases own power/authority	2 (5%)	—
Novelty value, challenge	1 (2%)	10 (19%)
Improves achievement scores	1 (2%)	—
Social influence (teachers spoke well of it)	1 (2%)	9 (16%)
Good politics	1 (2%	—
Opportunity to shape projects	-	5 (9%)
Gets better working conditions	-	3 (5%)

Administrators gave more diverse reasons and configured them differently from users. Pressure is far less frequently reported but is still present, notably among principals, and sometimes has a sharp bite. At the Proville (IV-C) site, for example, one principal called the innovation "another dumb program that was being shoved down our throats". Another commented that "for a principal to cross the district openly is almost like suicide". Data from the survey are instructive: 94% of the superintendents, 94% of principals, and 87% of users said they "wanted" to adopt the innovation (as contrasted with "had to"). The figures for "wanted to" are undoubtedly inflated, if only because they can include the situation where one "wants" to do the innovation because of superiors' expectations. But the cross-role trend of the survey data clearly fits with the field study results: users are more constrained than principals or superintendents.

The administrators' responses also indicate that instructional and school-wide improvement were salient motives; the new practice "had merits"; it "was a good alternative"; it "could be used elsewhere" in the system at a later stage. Note here again that local problem-solving, though more frequent than for users, was not a dominant theme (nor was it more prevalent in IV-C sites than in NDN sites). Nor was there——except for one administrator——explicit expectation that achievement scores (or any specific student outcome) would improve as a result of program adoption. The accent, not surprisingly, was on the school capacity-enhancing characteristics of the innovation (ex: enriching curriculum, providing remedial materials), which administrators felt could mean achievement gains further down the line.

It's of some interest to note teachers' greater growth motivation (novelty value, challenge, opportunity to shape projects) and the role of social influence, in comparison to administrator reponses.

At only two of the sites (Perry-Parkdale and Lido) was access to funds as such an explicit motive. But at a more-latent level, it seemed clear that virtually all sites were interested in the added resources the new programs provided: new materials, free training, salaries for aides, administrative slots for friends and protegées whom central office administrators were bringing along, either into a principalship or a central office job. For administrators, funding could even become an end in itself but often with clear career implications:

> One's job depends on how many projects you get funded (Central office admin. at Perry-Parkdale.)
>
> Outside dollars are irresistible.. But I don't write for grants unless I'm wired. (Central Office admin. at Burton.)

As with the teachers, administrators had multiple motives. Obviously, the greater the number of incentives and their relative importance to a key administrative actor, the more assertive and consequential the decision to adopt. And the closer we got to the full agendas of principals and central office personnel, the more numerous and various the incentives. Here is an illustration from the field notes:

> Summary of explicit and inferred motivations for the elementary education director: resolves local problem of low achievement, competes with elementary-level rival in central office, increases relative clout of elementary ed. sector, meets emotional needs (attention to disadvantaged pupils), enhances professional image, responds to pressures external to the district... All of roughly equal importance to her. (Banestown)

Career relevance of motives. In making available new resources while adding to the infrastructure of a school district, an innovation often alters career opportunities. First, it frequently creates new roles facilitating upward mobility. Teachers can become local trainers. Administrators are appointed program directors. Secondly, innovations also attract attention: those involved with their execution frequently get higher visibility than in their conventional work, and higher visibility can enhance professional advancement. Finally, since central office administrators were active advocates of most of the new practices we studied, they came into more direct contact with principals and teachers, thereby multiplying the opportunities for school-level personnel to forge useful interpersonal links. In short, innovations can accelerate promotions or other career shifts for both teachers and administrators.

We saw a good deal of career-related incentives for adopting innovations at the 12 field sites. But we should be careful. At only one site was career advancement the paramount motive for adoption; usually it was one of several reasons for adoption. Also, career incentives were not always obvious at the time of adoption, but materialized later, when local actors saw more clearly what the institutional implications of the new practice were. So local personnel were neither overly cynical nor Machiavellian; they simply looked out for themselves and capitalized on opportunities crossing their path. The important thing to remember is that paths exist.

What kinds of career shifts did site informants mention? We chose to sort out these motives as derived from what we called "trajectories". School people may have been going nowhere or going someplace in their career progression, so the innovation was an asylum, a way station, a vehicle, or a final destination. Logically enough, there were four gross trajectories: the innovation provided an opportunity to move in (for example, from a prolonged leave or from a distasteful job elsewhere), to stay in(securing, solidifying a new role;avoiding demotion), to move up (e.g., from aide to teacher, teacher to principal, principal to central office administrator) or to move away (to a lateral job, to another line of work). Below is a more-differentiated breakdown of the trajectories being followed by users and administrators.

Table 5: Dominant Career Incentives for Users and Administrators

Direction	Career motive	Users (N=56)	Administrators (N=41)
No career motive apparent		23 (41%)	21 (51%)
Moving in	Getting back in after a leave	2 (4%)	0
	Getting away from a distasteful job	2 (4%)	0
Staying in	Holding on to a job, securing one's status	4 (7%)	6 (15%)
Getting ready to move up	Getting positioned for later promotion	4 (7%)	4 (10%)
Moving up	Within the district	6 (11%)	7 (17%)
	Elsewhere	1 (2%)	1 (2%)
Moving away	To a private sector job	1 (2%)	0
	Laterally (another teaching or admin. job)	3 (5%)	0
Moving someone else in	As a replacement	0	1 (2%)
Unknown		10 (19%)	1 (2%)
	TOTALS	56	41

Roughly half of the administrators and teachers for whom there were data had no discernible career motive. Either they were not interested in changing roles, did not see the innovation as a good vehicle for career shifts, or simply focused fully on the contribution of the new practice to their immediate setting without regard to their own career progression. The remaining half had plans. For both teachers and administrators, these plans involved promotions more often than other kinds of shifts, but teachers' career motives were quite varied, whereas administrators seemed either to be setting up a promotion or solidifying one. For the most part, informants spoke to us openly about these plans, but were often discreet in their formulations, speaking of the innovation as "an intermediate step" or "a way to get more responsibility".* Sometimes, there were two-step trajectories:

> I figured it was a good way to get back in after my leave. The program had a good reputation and I liked the one-on-one work in it...It was an interesting job while I was waiting to get my own class (Teacher at Banestown).

"Moving someone else in" was a dominant motive in only one site, but a *sub rosa* one at two others. In two cases (Proville, Banestown) this led to intense jockeying that took its toll on program execution. The innovations did not create these perturbations but amplified interpersonal tensions already present, adding noise and friction to the system. In contrast, at 3 of the 5 sites where administrative careerism was low (Carson, Masepa, Tindale) implementation was smoother: more task-focused, more collaborative between central office administrators and building-level personnel and less perturbed when staff turned over. But the 2 other (Dun Hollow, Lido) seemed to *suffer* from the lack of central office investment which might have been stronger if a career motive had been present. In the five remaining sites, administrative careerism was strong, without being manic or exploitive; it appeared to inject energy into the adoption process by accelerating the time line, mobilizing resources and, in some cases, generating enthusiasm at the school building level.

---

*In almost all cases, teachers were well aware of the career plans of one another and of their principals, as were principals of central office personnel's career plans.

Attitudes

Centrality and initial attitudes. We tried to determine how large the innovation had loomed in the daily life of teachers and administrators at the time of adoption, asking them,"Compared to the kinds of things that matter for you...how much did this one really count, back then?" We also asked respondents whether they were initially favorable to the new practice. Here is a tabulation of responses from the 12 field sites:

Table 6: Centrality and Attitudes at the Time of Adoption

	Centrality			Attitudes		
	low	moderate	high	negative/ skeptical	neutral	positive
Users (N=56)	4 (7%)	19 (34%)	33 (59%)	4 (7%)	22 (39%)	30 (54%)
Administrators (N=41)	10 (24%)	11(27%)	22 (54%)	2 (5%)	5 (12%)	34 (83%)

Most users initially saw the innovation as central to their classroom life and were favorable to it, but many were neutral or had reservations. Centrality was high in early stages of program execution, especially if the innovation was complex or demanding for users. In these cases, teachers spoke of "a big step" or "the biggest thing I've done". Initial attitudes were more favorable when there was a strong advocate in the building, such as a principal or - even better - a department chairman or a respected peer. But there was clearly a wait-and-see attitude on the part of many, as if people were saying, "Let's see how it works initially", or "Let's get a better look at this program the principal or curriculum coordinator is so eager for us to try out".*

Centrality was lower for administrators and initial attitudes more favorable. Principals were often as much the targets or consumers of the project as were teachers, so their initial commitment was not always high.

---

*User centrality ("importance of the innovation to me") is marginally higher in our data than on the survey measure. The breakdown (N=296) is as follows: very important 54%, important 38%, not very important 6%, and not important 2%.

Also, many of the projects were organizationally modest, affecting only a few classrooms. Even in the case of central office advocates, the project was often one of many they were serving as patrons for. That administrators' initial attitudes were highly positive seemed often the result of central office advocacy and of the perception by principals that these innovations were improvements on current practices without being institutionally disruptive.

Are the innovations more central when they are bound up with users' careers? To some extent they are:

Table 7: Centrality and Career Relevance for Users (N=56)

	Centrality high	 moderate	 low
Career-linked	18 (82%)	4 (18%)	0
Career not a key factor	10 (42%)	12 (50%)	2 (8%)
(data missing: 10)			

The relationship would be still stronger if we controlled for constraint and complexity; almost all the cases of high centrality and low career relevance involve projects imposed by central office administrators and perceived by teachers as initially complex and demanding.

The relationship is just as strong for administrators:

Table 8: Centrality and Career Relevance for Administrators (N=41)

	Centrality high	 moderate	 low
Career-linked	16 (80%)	4 (20%)	0
Career not a key factor	4 (20%)	6 (30%)	10 (50%)
(data missing: 1)			

Note something else: decoupling career plans from the adoption of an innovation seems to de-energize administrators more than it does teachers. The four deviant cases of high centrality/low career relevance come from (a) estimates of early centrality (the innovation was a big item at the time of adoption, then consumed little energy) and/or (b) complex and demanding projects.

When we relate centrality to initial attitudes, there emerges a strong positive relationship Most respondents initially liked projects that were very central----i.e., would be requiring a lot of personal investment. There is clear social-psychological theory and research supporting the idea of "effort justification": we love that for which we have suffered. (Lawrence & Festinger, 1962). Here the justification seems to be anticipatory; if we have decided to do a difficult innovation, it must be something we like. (The exception here, of course, is those who felt they were being strong-armed into adoption.)

Adoption Timelines

We can get a fuller picture of the adoption process by looking at it over time, as a succession of decision points. Chart 6 displays, for the 12 sites, the times of initial awareness, adoption and first implementation, along with the location of key decision-makers. "Awareness" is the point when NDN sites first learned that the innovation existed, and the point when the IV-C "idea" germinated or was first conceived of by someone at the site. The chart shows two "adoption" points: (1) the point at which IV-C sites decided to proceed with development, and NDN sites decided to develop an adoption agreement with the developer/demonstrator; and (2) the point at which both types of sites received notification of funding. "Implementation" is defined as the first use involving students.

Awareness-to-adoption timelines appear to vary among sites. Looking into individual chronologies, there are few common reasons for this variation. In several cases, formal adoption depended on a funding decision taken outside the district; otherwise, the awareness-to-adoption time would have been shorter. Often, however, adoption lagged because central office administrators had other urgent agendas, wanted to enlist principals more

Chart 6: Adoption Timelines

Sponsor/Site	Location of Key Decision-makers	Awareness/ Germination Date	Adoption 1 Date	Adoption 2 Date	First Implementation Date	Awareness to Adoption 1 (No. of months)	Adoption 1 to Adoption 2 (No. of months)	Adoption 2 to Implementation (No. of months)	Total months Elapsed, Awareness to implementation
NDN									
Astoria	Central office	9/77	4/78?	4/78	9/78	7	0	5	12
Banestown	Central office(2)	11/78	11/78	1/79	3/79	0	2	2	4
Burton	Central office	11/78?	3/79	9/79	10/79	4?	6	1	11?
Calston	Central office	3/77	9/77	1/78	11/78	6	4	10	20
Lido	Principal, dept. chair	1/76?	2/76	4/76?	9/76	1?	2?	5?	8?
Masepa	Central office Teachers (2)	2/75	4/76	5/76?	9/76	14	1	4	19
Perry-Parkdale	Central office(2)	12/74?	9/75	12/76	9/77	9?	3	9	23?
					MEANS	5.9	2.6	5.1	13.9
IV-C									
Carson	Central office(1) Principal(1), teachers(2), counselor.	5/76	7/76	3/77	9/77	2	8	6	16
Dun Hollow	Central office(2)	1/77	3/77	6/77	1/78	2	3	7	12
Plummet	School board(3) Central office(2)	9/75?	1/76	6/76?	10/76	4?	5?	4?	13?
Proville	Central office(2)	12/74?	5/75	6/76	9/76	5?	11	3	19?
Tindale	Central office(2) Dept. chairs(2)	12/74?	1/76	5/76	9/76	15?	4	4	23?
					MEANS	5.6	6.2	4.8	16.6

Awareness: NDN site learns of innovation's existence
Germination: Someone at IV-C site conceives of innovation generally.
Adoption 1: (IV-C) Decision to proceed with development.
(NDN) Decision to develop an adoption agreement.
Adoption 2: Receipt of notification of funding
Implementation: First use with students.

?=exact date, or months elapsed, not available.

BEST COPY AVAILABLE

gradually or needed an assessment by principals before making up their own minds, which entailed - in the case of NDN projects - the scheduling of a visit to a demonstration site or to the following year's "awareness fair."

Initial awareness dates seem equivalently fuzzy in IV-C and NDN sites (remember that in some cases we were asking for information about events five years in the past). It seems to take no longer in the typical IV-C site than in NDN to move from the germination point to the decision to proceed actively with development and proposal-writing. However, the funding process (time between adoption 1 and adoption 2) appears to be administratively longer than in NDN, where funds for training and materials are forthcoming rapidly (three months, or so, on the average). In IV-C, the proposal describes an innovation that is novel to the funding agency, and larger sums than in NDN are typical, so it is not surprising that six months or so is involved.

Location of key decision-makers, who were usually the project's advocates, affected the time from awareness to adoption. If they were in the central office, things often moved rapidly. At Banestown, it was only a matter of a week or two before the central office coordinator decided to proceed with the Catch-Up program she had heard about. The Dun Hollow superintendent moved briskly to tell the elementary education head to proceed with implementing the Eskimo curriculum. (The long time at Tindale was due to the fact that "germination" occurred during a prior, but non-funded project that was the ancestor of the Tindale Reading Model.) Conversely, as at Masepa, when teachers had influence in the early decision-making, the decision to proceed with an adoption agreement came more gradually. The same was true at Proville, where the idea of the project was originated by a teacher. Until he was moved into the central office, things went slowly.

Most advocates were in key positions in the educational hierarchy; they needed few authorizations and few resources beyond external seed money, and could command local resources (in-service training funds, annual procurements of materials and equipment, deployment of aides and substitute teachers) so that a strong case for adoption could be made.

In most cases, the *decision to adopt* was made solely by a central office administrator, usually someone in a substantive role like an assistant superintendent for curriculum. In smaller sites, the head of elementary or secondary education played this role. In some cases, school building principals were consulted but summarily. Seldom were teachers decisive in the decision to adopt. As we noted earlier, however, when teachers or department chairs *were* active here (Masepa, Lido, Tindale, Carson), ultimate results were, in the 3 of the cases, very positive. But the chain leading from styles of local decision-making to ultimate outcomes is long and tangled; collegial decision-making appeared at most to heighten initial commitment — though this had the non-trivial consequence of carrying the project intact through the first serious barriers encountered during program execution.

To better ground these remarks, let us look at Chart 7, showing the roles played by local actors in the adoption decision.

The findings are quite clear. Central office administrators are, as Chart 6 showed, at the locus of decision-making in 11 of the 12 cases. Because Lido was a small-scale rural site, the district superintendent was consulted before the decision to adopt was made. At a larger site, it would have been conceivable for a low-wattage innovation like the one at Lido to be adopted without central office involvement.

Building principals are more often consulted (6 cases) than directly included in decision-making (2 cases) or wholly absent from it (3 cases). In all 6 cases of prior consultation, central office staff would probably have forged ahead with the innovation without building-level approval, unless they had run into a barrage of resistance, an unlikely event. The simple fact that the central office was promoting the project was a clear message for principals to get into line, even if they had some reservations (Calston, Masepa, Dun Hollow, Proville).

Chart 7: Roles Played in the Adoption Decision by Central Office Administrators, Building Administrators, and Teachers

	Cent.Office	Building Admin's		
Program/Site	Administrators	Principal	Dept.Head	Teachers
Astoria	Made decision	Absent—"informed"	N/A	Absent
Banestown	Made decision	Consulted	N/A	Consulted
Burton	Made decision	Consulted	N/A	Consulted
Calston	Made decision	Consulted	N/A	Absent
Lido	Consulted—"approved"	Made decision	Made decision	Consulted
Masepa	Made decision	Consulted	N/A	Made decision
Perry-Parkdale	Made decision	Consulted	Absent	Consulted
Carson	Made decision	Made decision	N/A	Made decision
Dun Hollow	Made decision	Absent	N/A	Absent
Plummet	Made decision	N/A *	N/A*	N/A*
Proville	Made decision	Absent	N/A	Absent
Tindale	Made decision	Consulted	Made decision	Absent
Modal role:	Made decision	Was consulted		Was absent

*No staff present at time of adoption, as project entailed creating a new institution

When department chairs were present as decision-makers, they played key roles in the adoption decision by "working" both the teaching staff and the building principal. At both Lido and Tindale, department heads were active advocates of the innovation and drew on their boundary-spanning roles to obtain local support.

Teachers are absent from the decision to adopt in 5 of the 11 possible cases, are consulted in 4 instances, and actively involved in two. At Masepa, the teacher was a pioneer in the use of the new language arts program; it was she, in fact, who urged the central office administrator to make a district-level adoption. At Carson, local teachers were an integral part of the collectively-enthusiastic team that developed the individualized instructional and guidance plan.

But looking just at the formal decision-making process is not only myopic but also possibly misleading. For example, at several sites (Tindale, Burton) there were informal meetings or workshops during which administrators and teachers looked into the concept of the new program or exchanged some initial information about a promising product that was to be later formally adopted by central office administrators alone. A project was often run around, in schematic form, among the various constituencies, before the formal decision was made. Of the 12 cases, there were only two (Astoria, Dun Hollow) where a decision to adopt was made in the central office with virtually no prior consultation. Even in those sites, there was evidence of prior working groups (Astoria) or informal contact (Dun Hollow) involving building-level staff.

Adoption to implementation. Things happened quickly after the adoption decision - sometimes too quickly. If we look at the 6 sites where implementation began 4 months or less after Adoption 2 (funding received), 4 of these (Calston, Banestown, Masepa, Plummet) ran into serious problems at the start from lack of needed training or materials, overload, or all three. The other two (Burton, Proville) were more modest add-on programs that were easier to space out and slow down.

In general, sites where the transition from adoption decision to implementation was longer had a more successful time of it, except where the projects were excessively large and complex.

Conclusions

Users, like administrators, have multiple motives for adopting an innovation. In nearly two thirds of the cases, the prime motive for users' adoption was administrative pressure, varying from strong encouragement to raw power. This often put teachers in the role of consumers or "targets" of the new practice, although most were neutral or favorable to it at the outset. Adopting the innovation to "solve local problems" was not a salient motive; rather, teachers felt the new practice would add resources, enrich curriculum or outperform existing practices. Another cluster of incentives turned around professional growth; implementation of the innovation was seen as a vehicle for becoming a stronger, more resourceful professional, almost independently of the merits of the project itself.

Administrators focused on the potential of the innovation to improve classroom instruction and school-wide management. Here again, problem-solving was not a strong item. An implicit incentive was that of gaining access to funds via adoption -- funds that provided new materials, free training,recruitment of aides and new supervisory posts.

Incentives were, for about half the sample, tied up with career plans. Local actors had more or less clear career trajectories in mind, and the innovation was a vehicle for moving in, moving up, staying in or moving away. For both users and administrators, the modal trajectory was securing their present status (staying in) or getting ready to move up. Too many career-driven incentives impeded successful adoption and implementation, but too few was equally a handicap. Career incentives galvanized local actors, teachers and administrators alike, to move more quickly, bypass regulations and mobilize in-service and procurement funds for the project.

For most users, the innovation was important; it loomed large in their daily life. Initial attitudes were neutral to positive. For administrators, the projects were often one of several they were working on, so centrality was lower, but initial attitudes were largely positive, in part because the new practice was perceived as an improvement on current practices that did not disrupt existing working arrangements.

There was a fairly strong relationship for users between the centrality of the project to them and its career relevance; people saw career-relevant practices as more important. Where career issues were not a key factor, administrators downrated project centrality more than teachers did. For both groups, centrality was related to initial attitudes; people liked innovations they saw as important in their daily work.

The length of the adoption process varied by site. At some sites, people moved from a first awareness of the innovation to a decision to adopt in a few months; others took over a year. The adoption-to-implementation cycle was faster. In 8 of 12 cases, it took less than 6 months once funding was approved. In fact, many of these quick starters got into trouble during early implementation for having hurried the project into execution.

There were almost invariably key innovation advocates in the central office, most of whom made the actual decision to adopt, usually after some consultation with building administrators and teachers.

Views of the Innovation: Initial Perceptions and Assessments

Introduction/Overview of Findings

Our sample comprises only sites at which an innovation was actually adopted and implemented in some measurable way. While we have cases in which such implementation was uneven, unsuccessful or largely ceremonial, we have no non-starters. In fact, looking over the data from the 12 sites, the adoption decision* itself seems to have been non-controversial (a finding echoed in survey data from the larger study). Either all parties were favorable, or unfavorable parties had little de facto power to dissent. There is another possibility: initial doubts or resistance were negotiated out of the way prior to implementation. This last option was common among our sample, notably among the NDN projects where it was often a finished "product" that was being implemented, and much of the bargaining had to do with the degrees of freedom given users to modify that product. For example, the adoption process at Burton, Calston and Lido included a cascade of negotiations about the conditions of local use that began at the level of the program designer (the developer/demonstrator), flowed through the central office and ended with explicit (Burton) or implicit (Calston) agreements between principals and end users on how much of the project was to be implemented. In short, the adoption process is a political one.

The process is a fascinating one at our sites, where central office administrators are usually champions or strong advocates of the new practice. They have the power to impose adoption on local principals and users, and some do precisely that (for ex., at Astoria and Tindale). Others bargain. The bargain is usually for a fair trial at the school or classroom level. This was the scenario, for instance, at Burton (NDN), Calston (NDN) and Dun Hollow (IV-C). Sometimes, administrators made their offer more attractive by promising additional resources or consultant services throughout the first year (Barestown, Calston). In most cases, however, users had little room to maneuver; they were confronting offers they could not refuse and usually assented while the negotiations had some semblance of symmetry, i.e., before administrators resorted to raw power.

---

* The reader is reminded that for NDN sites, the adoption decision was whether to use the innovation in the district. For IV-C sites, the "adoption" decision was whether to proceed actively with the development work that would be required before "use" was possible.

In this section we survey several aspects of the adoption process, focusing on two variable clusters: (a) users' and administrators' initial perceptions or assessments of the innovation -- how the project looked to them when first proposed — and (b) informants' estimates of the changes implied by the new practice at the classroom and organizational levels.

Chronologically, these perceptions, assessments and estimates of demanded change occur in a sort of gray area. In some cases, the adoption decision had for practical purposes already been made, and prospective users were viewing the innovation in the perspective of pre-implementation; in others, these early assessments were made prior to the actual "adoption" decision. In all cases we are talking of users' retrospective views of the just-encountered innovation.

First, a caveat: our data are weaker here than in sections dealing with implementation. In part, this was due to retrospective bias operating when we asked informants to recall events that were sometimes 3-4 years old. Like others before them, our informants probably sinned in recalling selectively, streamlining what had probably been an unruly adoption process, and confounding their pre-adoption impressions with their post-adoption experiences. In other cases, we were diverted from our line of questioning; for ex., a question about perceived difficulty of implementing might lead into a response about the relative merits of the new practice. This translates into a sizeable amount of missing data. In addition, since our concern in this section is with the initial decision to adopt, we report only on data collected from first-year users, regardless of how long the innovation had been around at the site. There were 3-5 such users per site, average 3.8.

We collected data on 6 variables of interest:

> Salient features striking users and administrators.
>
> Initial "size-up of the innovation by users and administrators (strengths, weaknesses, probable implementation problems, etc.)
>
> Goodness of fit with users' operating philosophies or teaching styles.
>
> Perceived changes anticipated in implementing the innovation at the classroom level.
>
> Perceived changes anticipated at the organization level.
>
> Overall goodness of organizational fit, as inferred by researchers from administrators' assessments.

For purposes of cross-site analysis, the "salience" variable was dropped, since it yielded only site-specific responses. But we added a general category, other variables influencing the adoption decision, along with an overall estimate of approval on the part of users, principals and central office administrators.

Illustrative data. Before moving to the cross-site level of analysis, it is worth looking at how some of these variables fit together at the site level. Looking at early users' responses, here are the pre-implementation assessments made at Masepa (NDN) and Perry-Parkdale (NDN) (Chart 8).

Note that, in reading across a row for a particular informant, that there is usually a central "theme" or "message" that often varies from the responses of other informants. This seems more the case at Perry-Parkdale than at Masepa. Everyone is locked into his or her solitude, although all are confronting the "same" experience. Even when responses look alike, the underlying perception can be different. For example, R. Quint at Masepa is struck by the prescriptiveness of the new program (an integrated language arts curriculum) and its attendant instructional complexity. It seems boring, yet overwhelming. All her familiar props are taken away (teacher's manual, workbooks and worksheets) and the separate components (grammar, spelling, reading, composition) thrown together. The personal fit is poor. On the other hand, L. Bayeis is also struck by the prescriptiveness and wonders if she is up to the task, but basically feels comfortable with the new format, which colors her response to all 5 questions.

Moving to Perry-Parkdale, the response profiles of Douglass and Siegrister are also superficially similar; both evoke the perceived quality of the program, its demandingness and high pupil differentiation. But Douglass welcomes the flexibility and the increased responsibility given pupils, while Siegrister turns the same features over; she is distressed about what she perceives as the lack of control over pupils and vagueness in the program, both features heightening her insecurity. In a sense, all informants seem to be assessing the new project in the

Chart 8: Users' Initial Reactions at Masepa and Perry-Parkdale Sites

		SIZE-UP			
MASEPA USERS	SALIENT CHARACTERISTICS	LOOKING TOWARDS IMPLEMENTATION	STRENGTHS AND WEAKNESSES/DOUBTS	ANTICIPATED CLASSROOM CHANGES	FIT WITH PREVIOUS STYLE
R. Quint 6th grade Start: 1977	Regimentation, inflexibility, repetition	Complex, unclear difficult to get on top of, prescriptive	Weaknesses: seemed more a spelling than a reading program; repetitive, possibly monotonous.	Rescheduling - all language arts taught together. Never had dictations before. No teacher's manual, workbooks, worksheets.	Poor: "It wasn't me." Not enough flexibility.
F. Morelly # 2nd grade Start: 1978	So structured. So much for teachers to memorize. Confusing: so many components.	Very complex, unclear, very prescriptive, manageable: "I could get on top of it."	Doubts: written work every day? "I wasn't impressed."	Rescheduling reading periods. Pupils do own record-keeping. More time on specifid skill-mastering, e.g. spelling, writing.	Uncertain: "Later I found things that didn't fit my style."
L. Bayeis 4th grade Start: 1977	Highly structured. Direct, frontal instruction (drill).	Very complicated (to understand). Hard to get on top of. Complex. Prescriptive ("That's why I liked it."	Strengths: Expectations clear for pupils. Doubts: Would I get organized? Would I have time to do daily cycle?	No teacher's manual, workbooks, worksheets. Grouping pupils by ability levels.	Good: "I like structured and systematic things."
PERRY-PARKDALE USERS					
Jesseman Director	Motivating qualities (would deal with kids well). Individualized. Longer time blocks. Well organized. Concept "obvious & simple.	Would be good for kids at Aldria. Scope would be substantial (2 bldgs, district outside). No doubts (got scary later).		Community contact. Longer, closer contact w. students. "Exploration mentality."	Had worked with career ed & some work experience; used to individualizing. In general: needed more student-oriented, less subject-centered staff.
Douglass (Learning Manager)	A complete alternative Work in community more than classroom, effectively	A good-quality program. Good concepts, substantive ideas. Like individualization.		Planning under uncertainty. More tutoring. "You feel loose", not like daily lessons. Flexibility, low control. More paper work. More staff team functioning, openness, closeness. More commitment, energy. Dealing with non-teachers.	Was counselor, used to individual attention.
Colby # (Learning Manager, 2nd year)	The "laxness", not forcing kids to do their work."	Doubted whether non-control is good idea.		Couldn't tell students what to do--"not a designated anything." Couldn't do regular classroom planning; new subject areas, some unfamiliar. Demandingness. More individualization. More sustained work with same kids.	Felt apprehensive, though used to working with kids closely/personally to some extent. Sees self as "C person", which program needs.
Siegrister (Community Resource Specialist)	[No data]	Program looked "like a Cadillac" when VW wanted. "Too free", "it can't work." But impressive.		Less control, less focused attention from kids, goals not clear or measurable. "Wow, too much freedom!" Takes more energy.	Felt dismay and uncertainty about her ability to cope, though liked working intensively with students, some counseling training.

Second-year user, included for comparison.

BEST COPY AVAILABLE

light of how easy or difficult they anticipate its implementation to be -- how well they feel they can _cope_. Intellectualism is low. The assessment of the innovation is made less on its merits than on the estimate of how much anticipated practice change is involved and how confident individual actors feel of bridging that gap. Note, for instance, in the "salient characteristics" column, how many features are action-directed, i.e., connected to what teachers and pupils will be _doing_ when the project is operational. These findings fit with Hall's (1976) work with the Stages of Concern (SoC) instrument, showing that users are initially _self_- preoccupied.

Looking Across the 12 Sites

Chart 9 displays data collected across all sites. The first four columns focus on users' initial perceptions (initial size-up, personal fit, implied changes at the classroom level), with a single administrator measure (size-up by principals and central office staff). The next two columns, "anticipated organizational changes" and "organizational fit", display administrators' responses.* For each site, the responses of individuals have been pooled to make a "mean" site-level assessment. The seventh column lists "other variables" that contributed to the decision to adopt the innovation, as seen by users or administrators.

Since there were no obviously meaningful sub-groups among individual sites, they are arranged alphabetically within NDN and IV-C.

There are several cases with missing data, some sites for which the case report did not provide responses in the categories used for analysis, and 4 cases in which classroom level change was not a key issue.

Chart 9 probably looks complex and forbidding at first. To help it "come alive" for the reader, we will make a vertical analysis, discussing each column one by one. We do this deliberately, to help the reader see the conclusions we reached, and how we reached them.

---

*From 2-5 administrators were involved in each site, averaging 3.1.

Chart 9: Initial Assessments of the Innovation at 12 Field Site

NDN Sites	1. Size-up Users	 Administrators	2. Goodness of user fit	3. Level of anticipated classroom-level change	4. Level of anticipated organization-level change	5. Goodness of organiza-tional fit	6. Other key variables
Asteria	Simple-complex* Clear-unclear Easy to do-Hard to do Flexible-prescriptive	MD Clear-unclear MD Flexible-prescriptive	Good	High	Moderate/High	Poor	Admin. pressure Appeal of program segments Local obedience Admin. latitude
Banestown	Simple-complex Clear-unclear Easy to do-Hard to do Flexible-prescriptive	Simple-complex Clear-unclear Easy to do-Hard to do Flexible-prescriptive	Good	Low+	Low-Moderate	Fair/Good	Problem solution Admin. pressure Minimal disruption
Burton	Flexible-prescriptive MD	Flexible-prescriptive MD	Fair	High	Moderate	Poor/Fair	Appeal of materials "Trial" status Admin. latitude Admin. pressure
Calston	MD Clear-unclear Easy to do-Hard to do Flexible-prescriptive	MD Easy to do-Hard to do	Good	Moderate	Low	Fair/Good	Appeal of program Admin. pressure Admin. latitude Problem solution
Lido	Simple-complex Clear-unclear Flexible-prescriptive MD	MD	Fair	Moderate	Low	Fair/Good	Appeal of materials Appeal of funds
Masepa	Simple-complex Clear-unclear Easy to do-Hard to do Flexible-prescriptive	Simple-complex Clear-unclear, "manageable" Prescriptive -flexible	Fair/Poor	High	Moderate	Fair	Admin. pressure Peer pressure Reputation of program
Perry-Parkdale	Clear-unclear* Easy to do-Hard to do Flexible-prescriptive MD	MD	Good	Low+	Moderate	Fair/Good	Appeal of program Appeal of funds Problem solution
IV-C Sites							
Carson	Simple-complex Clear-unclear Easy to do-Hard to do Flexible-prescriptive	MD	Fair	High	High	Fair/Good	Ideological core System renewal Admin. pressure (moderate)
Dun Hollow	Simple-complex* Clear-unclear Easy to do-Hard to do Flexible-prescriptive	MD	Poor	Low	Low	Fair/Good	"Trial" status Topicality of project Admin. pressure
Plummet	Simple-complex* Clear-unclear Easy to do-Hard to do Flexible-prescriptive	MD	Good	High	High	Good	Problem-solution Ideological core
Proville	MD	MD	Good	Low+	Moderate	Fair	Admin. careerism Admin. pressure "Face validity" of project
Tindale	Simple-complex Clear-unclear Easy to do-Hard to do Flexible-prescriptive	Simple-complex Clear-unclear Easy to do-Hard to do Flexible-prescriptive	Fair	Moderate	Low/Moderate	Fair/Good	Satisfaction with project design Problem-solution Admin. pressure

MD: Missing Data
* : Inferences from case report data
+ : Few classroom-level components in program

Underlines= dominant user & administrator responses

Initial size-up of the innovation. As the double column 1 shows, we asked informants to choose between two poles of four scales often employed to determine how "usable" people judge an innovation to be when they first assess it. The dominant user and administrator responses for each site are underlined.

Overall, these judgments could be described as daunting, especially on the users' part. Most saw the new practice as complex, in the sense of having many parts or involving several different skills. More users were "unclear" than "clear" about the program's objectives, features and workings. This was especially true at sites where the innovation had already been adopted at the level of the central office -- for example, at Banestown, Calston and Tindale. As the Calston site report put it, most users were at best "dimly aware" of what they were being asked to do. In our analysis of early implementation (see pp. 109 ff.), we find that users' understanding remains fairly muddy well into the initial six months, and that some users (ex: Banestown) who had thought they understood how the project worked found out they had only a global sense of what was actually involved operationally. The gist of these data seems to be that many users tacitly postponed (or avoided) the achievement of clarity until they actually got their hands on the materials under classroom conditions, on the apparently correct premise that clarity would emerge progressively from hands-on experience.

Sometimes levels of complexity and clarity were simply a function of the scale or scope of the innovation; bigger projects were more unfathomable than small ones. For example, users at Lido and Dun Hollow felt they had a good fix on the add-on curriculum they were to implement, whereas the more-mystified users at Plummet and Carson were looking at the creation of a subsystem, or a far-reaching change in teacher, student and parent roles.

At all sites providing a response, users said they anticipated the innovation would be hard to do. Sometimes, the fault lay in the design of the practice. At Dun Hollow, for instance, the program was judged hard to do because users saw it as badly flawed, with too few experiential activities and an instructional format adjusted to older pupils than theirs. But in most cases, users were wondering whether they were equal to the task. Here are two representative comments from sites in this category:

> This was big, almost bordering on the overwhelming. We had to deliver if the parents wouldn't. It jacked us up. (Teacher at Carson)
>
> [My doubt was that] I didn't know how to handle the two programs [the innovation and the current reading curriculum] at once. It was difficult to correlate the two programs. It meant a good deal more work, and for what? (Teacher at Calston)

Finally, most of the new practices were judged to be flexible, the exceptions being Astoria, Masepa and Tindale, where the program depended largely on a highly scripted instructional sequence. Most informants appreciated the flexibility and complained about the prescriptiveness, but there were several exceptions. For example, some users at Masepa had actively sought a prescriptive language arts program and all 4 users at Banestown saw the innovation as too flexible. One said this:

> I knew what kinds of things I wanted to get across to the children, but I didn't know how to do it and the program didn't tell you at all how to do it...it was all very loose. (Teacher at Banestown)

One final remark on the sizing-up process as shown in column 1 on Chart 9: note that where we have a full set of data for administrators, there are some sharp differences between their initial perceptions and those of users. Banestown, Masepa and Tindale are cases in point. For central office administrators notably, the innovations looked simple, clear and manageable. In some instances, this was due to the fact that administrators, as partisans of the new practice, had studied it more closely. But it was probably more the case that new practices looked simpler and more tractable to people who would not themselves have to carry them out. (Had the innovation been chiefly an *administrative* change, we would probably have had inverse assessments from users and administrators.) Data from the initial phase of program execution at these 3 sites (see following section) show that users' assessments turned out to be more accurate than administrators': early implementation was "rough, or "very rough".

There is also clear evidence at these 3 sites and others (e.g., Calston) that administrators tried to convince users that their fears were groundless. This occurred during what we might call the "seduction phase," when potential users were being recruited for a project administrators had decided to adopt. Teachers looked at the project and balked; administrators reassured them, sometimes a little misleadingly. In these cases, there was bitterness on the part of users after a rocky period of initial use, often resulting in a new wave of reassurances coupled with more resources, such as the provision of consultants. This scenario (which occurred, for example, at Banestown, Calston and Masepa) is discussed later.

Sometimes both administrators and users were misled. Here is a vignette from Banestown:

> There are indications that the people who visited the developer's site came away with a deceptively sanguine view of the innovation; it looked straightforward, clear, flexible, perhaps a little complex in getting the correct fit between the wealth of materials and the diagnosed skill difficulties in reading and math. [One of the lab teachers] explains that, as soon as the program began, her view changed dramatically...[It] was complex and [seemed] impossible to individualize for 30 children coming in 30-minute waves with no transition or planning time between each group. This latter perspective was shared by first-year teachers who had not been to the developer's site. Their first look told them it was complex, unclear, difficult to master, and disjointedly flexible. (Field notes)

The point here is not that program developers deceived future users, but that novices had come to observe a program that had been progressively debugged and stabilized, and thus looked deceptively effortless.

Goodness of personal fit (column 2). Users warmed to this question. There was, in effect, a very quick assessment of the innovation when users first saw or heard of it — a sort of 'trying on' the requisite skills and materials, much as one mentally tries on a dress or suit in a store window. More careful appraisals came later, but these early assessments were hard to shake. When the fit was a good one, users spoke of it almost somatically: the practice "felt right" (Banestown); it was "like putting your hand in a new glove" (Carson). By contrast, a poor fit "wasn't me" or "didn't fit my style" (Masepa).

Behind these responses were three somewhat distinct judgments. First, users connected goodness of fit to congenial ways of relating to pupils. This point emerged more frequently when the fit was poor, often in cases of high-prescriptive innovations. The language used by disgruntled teachers at Masepa and Tindale is sometimes strong; people talk of being "stifled" or "violated". A second meaning relates to the familiarity of the innovation. A good fit occurs when the project demands skills that are "in my routine" (Astoria) or "are [already] under my belt" (Calston). Finally, there is an normative or philosophical dimension; goodness of fit means it "sounded like what I believe in" (Carson) or "what these kids really need" (Plummet).

Looking across all 12 sites, goodness of personal fit is judged fair to good. A site evaluation of "fair" often means that some users felt comfortable with the new practice and others didn't; it was common to find mixed reactions of this kind at a given site. But goodness of fit is not a strong predictor of later success; some apparently well-tailored sites ran into serious trouble from the start (e.g., Banestown, Calston, Proville) and some fair-poor fits were associated with reasonably smooth program execution (Lido, Dun Hollow, Burton). As we shall see, something else along with goodness of fit was at work.

A final point: poor user fit was sometimes actively sought out by users. For instance, users at Banestown, Burton, Carson and Lido saw the innovation as a pacer — a vehicle for growth or change in directions they wanted to go. In all cases, the challenge was to move from a more academic, classroom-based format to a field-based (Lido), inquiry-based (Burton) or child-centered (Carson, Banestown) approach. In brief, innovations can be vehicles for professional growth, almost independently of their hoped-for effects on pupils or schools.

Anticipated classroom change. Users were asked to recall how much change they had expected to result from use of the innovation in their usual practices of grouping, evaluating, instructing, managing or relating to pupils.* Column 3 on Chart 9 shows that the question was ill-suited to innovations with few classroom-level components (Banestown, Perry-Parkdale and Proville). In the remaining 9 cases, anticipated classroom change tends to run high (5 cases, with 3 others judged 'moderate' and 1 'low'). Also, if we redefine classroom change more broadly as the amount of practice change required of users in their new setting, be it inside or outside a classroom, the anticipated levels are high at both Banestown and Perry-Parkdale, thus swelling the ranks of the high anticipated-change sites to over half the sample.

Readers can get the flavor of the types of changes users expected by looking at the entries on Chart 8 for Masepa and Perry-Parkdale. In both cases, big shifts were involved, and were usually identified most clearly by users. In general, anticipated changes could cover every aspect of classroom life: different materials, new instructional sequences, revamped curricula, new evaluation and supervisory modes, the loss of familiar props (such as teachers' manuals and workbooks), or the deletion of competing units. Some of these changes were welcome, while others looked foreboding. All looked as if they would require more work than the present arrangement. Some users felt that local administrators underestimated both the added risks and investment facing adopting teachers. An illustrative remark by a first-year prospective user at Calston:

---

* The reader should note that anticipated classroom change also turned out to be an important variable in the survey data from the larger study(see Volumes II and III). Causal explanations were much more coherent for the sub-population of users for whom the innovation represented a substantial change in practice.

> Sure, I want to try it, but there must be a realistic commitment on the part of the administration. It's no good. All it is is taking you down for the third time. There's no sense of understanding of what it takes to implement it.

Although our data are fairly plentiful here, they suffer from retrospective bias. Scanning the 'anticipated classroom change' column on Chart 9 shows that people are talking more about changes they experienced than ones they anticipated. This was difficult for informants to avoid. When we insisted more on getting their perceptions prior to jumping in, we found either that recollections were foggy or that users hadn't given the matter much thought. Like the issue of initial clarity about the innovation, users seemed to suspend judgment until they actually came to grips with the practice under normal working conditions. If, however, the changes were drastic and salient, as was the case at Astoria, Burton, Masepa and Carson, some of the consequences were more readily apparent.

Let us stay for a moment with these four high anticipated-change sites. At Astoria, the new program entailed a near-total reorganization of the classroom. As one user put it, "You'd have to be organized completely differently...I'd have to throw out my basal program." At Burton, the innovation called for inquiry-based, field-centered and student-run activities in largely conventional lecture-based, self-contained and teacher-run classrooms. Thus substantial structural changes were potentially likely at both sites. At Carson, changes in daily practice were yoked to attitudinal shifts; the program called for increased personal involvement and interpersonal closeness between teachers and pupils carrying out an individualized instructional and counseling plan. Some early users were skeptical, others threatened; all felt overwhelmed by the commitment required. Finally, we labeled Masepa a "teacher-transforming" site to reflect the depth and scope of within-classroom changes resulting from execution of the new practice. The principal at one of the Masepa schools captured it nicely:

> Teachers who've taught for years and years with a grammar they know backwards and forwards: they'll go through it page by page; they know all the workbooks; they've got worksheets for the children. Now all of a sudden they can't use that anymore. They've got to go to flip charts and mastery tests and creative writing sheets that they don't have any experience with, and a lot of this material they have to make by themselves...it's a lot to take on.

We focus later on how people coped with bad structural marriages and threatening transformations. As a quick synopsis, the innovations at Astoria and Burton were changed considerably, via administrative "permission", to accommodate to users, whereas at Carson and Masepa it was the users who accommodated, all in the course of an often painful pilgrimage. We should note that these latter sites had more substantial results than the former two (see Chapter VI).

Anticipated organizational changes. Column 4 on Chart 9 suggests that local sites were about equally divided between high, moderate and low levels of anticipated organizational change. Generally, sites anticipating a lot of such change also expected strong classroom-level shifts. The most awesome case of anticipated organizational change was Plummet, where an entirely new institution was to be created as an alternative to conventional high schools in the city.

The contrast between organizationally ambitious and modest projects is striking. While actors at Carson were looking at school-wide scheduling and far-ranging role/relational changes, administrators at Lido and Calston had to resolve relatively trivial issues of transportation for one or two classes or increased inventories of books. Organizationally modest projects were for the most part small modules that could be plugged into, tied onto or pulled out from existing classroom-based components.

Organizational changes, which are discussed more fully in Chapter V, pp. 277-310, fell into three broad categories. Structural changes included the creation of a new, functionally separate unit, such as an in-service committee or management team or, in the case of Plummet, the creation of previously absent links between the high schools and courts. A more potentially conflict-laden structural change could result from the fact that the new program came into competition with existing programs (for ex., at Perry-Parkdale and Proville), drawing from the same, limited pool of students. For the most part, users and administrators saw these features before starting out, though they sometimes minimized their expected impact.

Most innovations entailed operational or procedural changes. There would be rescheduling, new evaluation and supervisory forms, increased coordination between teachers or administrators, revised class loads or new teaming arrangements among teachers. Some of these were more consequential than others. For instance, shifting the schedule for physical education to accommodate the new language arts curriculum (Masepa) was more trivial than team-teaching remedial reading classes (Tindale). Here again, with allowances for retrospective bias, most informants seemed to be aware of these changes prior to implementation.

Finally, site personnel could anticipate changes in the organizational climate. This often turned around the creation of new assumptions or norms (school-wide expections or standards). For example, to carry out the remedial reading program at Tindale effectively, teachers had to have a shared belief that low-achieving pupils could succeed and that a new approach to reading would achieve this end. At Carson, the individualized planning concept required teachers to become advocates of their pupils and to accept out-of-school learning as legitimate. At Perry-Parkdale, pupil self-regulation and more egalitarian pupil-teacher relations were important premises of the career education program.

Climate changes were hard to anticipate before local actors actually confronted them. Few were seen in advance, except in the form of personal concerns (ex: worries among Perry-Parkdale staff about the monitoring of pupils at job sites). Nor did informants seem aware of the links between procedural and climate changes — how, for example, setting up a pullout remedial lab (at Banestown) could result in one teacher's monitoring what another was doing in a school where the climate supported independence and isolation. Often, administrators lacked an overall vision of what they were undertaking. Rather, energy went into getting the new program on its feet, then resolving one problem at a time.

Here are two illustrations of weak anticipation. At Banestown, the superintendent was unable to assimilate the idea that there could be different readers or math materials within a single reading and math program. Two central office administrators put it charitably: "He gets confused." Others had no difficulty with the idea of using diverse materials, and proceeded that way. But no one, apparently, saw that using different materials from the math workbooks would transfer poorly when pupils moved from classroom to lab or lab to classroom. At Perry-Parkdale, users did not realize the full extent to which the rather strict control mechanisms at the high schools would have to be relaxed in order to implement the career education program. The consequences of "trusting students" and the attendant vulnerability to trust violation were, at best, dimly perceived before the program was underway.

Organizational fit (column 5 of Chart 9). To some degree, administrators judged goodness of organizational fit the way users judged goodness of personal fit. But once again the world-views were somewhat different. Administrators seemed to factor in the demandingness of the new project on the school or school district in relation to the resilience or institutional slack available to meet the demands — a sort of stress ratio. For example, at Astoria, the vice-principal saw right away that the proposed — more precisely, the imposed — remedial pre-school project would wreak havoc on the organization of first-grade classrooms expected to use it. The amount of institutional change would be disproportionate to the likely rewards. The central office advocate, needing to be assured of "adoption" in the 92 schools of the district, was quick to allow local option in implementation, and the solution for this school was a largely ceremonial, decorative gesture: the program was eventually "implemented" in a pull-out, truncated form using aides, parents and the local administrator.

The second judgment method used by administrators was a rapid cost-benefit calculation: how much did the innovation have going for it in institutional terms, and how much trouble was it likely to cause? Since all innovations had appealing and unattractive features, the key criterion was the differential *weights* that administrators put on the separate features. An illustration: the reading program at Calston was judged to be well-designed, appropriately remedial and strong in areas (literature) where existing curricula were weak. *But* it entailed extra work for teachers, was not wholly correlated with the rest of the reading curriculum and looked tricky to implement, with its highly individualized format. For the central office administrator, some aspects (ex: the literature component) were especially appealing and others (ex: the individualization) less so. For the principals, on the other hand, the design and remedial aspects were paramount, but the added work and individualization were worrisome. And the principals had to factor in the relative institutional weights of the pressure to adopt coming from the central office and the complaints coming from teachers. These calculations were thus different for different role incumbents. But, across the 12 sites, they were usually of the same *type*, had *similar weightings* and gave way to a similar *process of intra-institutional bargaining*.

Such calculations get still more convoluted when we consider that changes in one part of the organization are likely to have effects elsewhere. Administrators did not seem to make these kinds of analyses. But administrators did realize that these programs were double-edged, in that they *resolved* some troublesome institutional problems while *creating* some new ones. For example, the career education project at Perry-Parkdale was a good capstone to the existing network of vocational programs, was also a convenient "dumping ground" for apathetic or intractable students, and could run on outside funds, when inside funds were tight. The program could also function as a separate unit;

no new administrative links were needed between the two participating high schools. As we saw earlier, however, some new problems were likely if the program were adopted: low supervision of pupils, competition with other projects, an overly non-academic focus and the necessity, probably sooner than later, of picking up the costs with local funds. But since the upshot of such tradeoffs was formal adoption in all cases, the assessment of organizational fit was often skewed by the fact that administrators focused more on the benefits than the costs -- many of which they either did not want to see or were initially unable to see.

We noted a sort of "Scarlett O'Hara effect" among administrators that influenced their decision to adopt. For most, the project looked good; it came well-recommended and, sometimes, well-endowed. It seemed to resolve some gnawing problems or, alternatively, to outperform existing practices. True, it made for institutional complications. Some prospective users were lukewarm or openly hostile. There could be, in institutional terms, a messy day of reckoning in 6 months or a year, but that was far away, and there was plenty of time between now and then to straighten things out. All that could be worried about tomorrow, as Scarlett was fond of saying.

Column 5 on Chart 9 shows that the 12 sites were evenly split between poor, fair and good organizational fits, as judged by administrators and pooled by site researchers to make site-level estimates. There is a tendency, logically enough, for goodness of fit to relate directly to anticipated organizational change; big changes put more stress on the system than small ones.

The two deviant cases are Plummet and Carson, where anticipated change was high, and the fit was expected to be good or nearly so. In

Plummet (where the actual fit turned out to be poor)* it seemed that the wholly new school would encounter few existing structures to be modified. This, along with other assets -- strong central office support, the serious teenage delinquency problem to be solved, nearly full autonomy from city-wide regulations and a committed project staff with experience in reaching a disenfranchised student public -- made almost all the signs look good, and others (ex: skepticism on the part of some school board members, no assessment of the real capacities of the incoming student public) look less ominous than they later turned out to be.

At Carson, it seemed that the ideological zeal of the program's designers and volunteer users led them to minimize the far-reaching role changes (along with problems of scheduling, record-keeping, in-service training) that would be involved; this denial was stronger for administrators, as we have noted elsewhere.

Other key variables. The 5 variables discussed so far on Chart 9 represent our best guesses at what was important for users and administrators in thinking about the new practice they were about to implement. In most cases, we guessed fairly well; these size-up, anticipated-change and fit measures often turned out to be influential, and some, as we shall see, were decisive in guiding early implementation at the 12 field sites. But these are premeditated factors -- variables we had fed into the study, before collecting data, drawing from other empirical and conceptual work on the change process. We were aware that more factors were likely to be in play during the adoption process, and tried to keep our data collection efforts open to their emergence.

Column 6 on Chart 9 provides a site-by-site list of these additional variables. We tried to keep the list short -- including only highly salient items — and to gauge the relative importance of each. This is reflected for each site by the order in which the items are listed. Note that these variables are meant to capture influences facilitating or obstructing the local decision to adopt and implement.

---

*Fit problems at Plummet were largely with the incoming student population, not with the structure or procedures of the district organization.

The most frequent item is administrative pressure, usually exerted in a daisy chain from the central office through the principal to lukewarm or dubious teachers. This was not always the most important factor, but it is on the 'short list' in column 6 in 8 of the 12 cases; interestingly,it is present at 4 of the 5 IV-C sites. Of course, there were degrees of pressure: subtle at Carson, diplomatic at Dun Hollow, heavy-handed at Tindale. We saw earlier that central office administrators were strong advocates of the new practice at several sites and that, in most of these, the next step in their career trajectory was tied up with the innovation. Users were usually well aware of this.

In five cases, there were problems to which the innovation appeared to be a remedy, if not a solution. The thesis that most innovations constitute responses to perceived problems is not upheld in our sample. If we look more closely at the five "problem-solution" sites, the acuity of the problem is only sharp at 2 (Banestown and Plummet), moderately high at 1 (Tindale) and low at 2 (Calston, Perry-Parkdale).

The notion of the innovation's having a relative advantage over what site informants had available at the time is somewhat problematic. Few people framed the adoption decision that explicitly. In 9 of the 12 sites (6 of them NDN), people focused on the project's appeal----its design or its materials — or simply said, "It looked good". The comparison to current practice was usually left implicit -- and current practice was not usually seen as notably disappointing or dysfunctional.

Finally, at 4 sites we get a glimpse of the institutional negotiation that often accompanied adoption. Informants, usually principals and users, approve of the proposed project because they will have latitude to change it (Astoria, Burton), are only using it on a trial basis with no ultimate commitment (Burton, Dun Hollow), or are assured that its use will cause minimal disruption of ongoing working arrangements (Banestown). The last two items are also important to non-users, whose assent is often important.

Estimates of approval prior to early use.We can pull much of this material together by generating a single measure of how users, principals and central office administrators felt about the innovation before actually starting in. From the analysis of the 12 site reports, we derived such an estimate: Chart 10 arrays the responses by site. The first three columns register initial attitudes---when informants first confronted the innovation----and the next three columns show shifts---very few in number--between that time and the point of first implementation.

Simply eyeballing the table gets the central tendencies. Users are more extreme in their approval and disapproval; principals tend to be more cautiously near the middle of the scale; central office people are favorable in 11 cases (and enthusiastically so in 6). The deviant case is Lido, where the initiative came solely from the teachers -- the only such case in our sample.

Chart 10: Initial and Revised Attitudes Toward the Innovation at 12 Field Sites

	Program/Site	Initial attitude: at Adoption 2			Later attitude: at first implementation		
		Users	Princ.	Cent.off.	Users	Princ.	Cent.off.
NDN sites	Astoria	—	—	++	+	+	NC
	Banestown	+	+	++	NC	NC	NC
	Burton	—	0	+	+	NC	NC
	Calston	-	+	++	+	NC	NC
	Lido	++	+	0	NC	NC	NC
	Masepa	+/-	-	++	NC	0	NC
	Perry-Parkdale	+	-	+			
IV-C sites	Carson	+(p) +/-(ot)	+	+	NC	NC	NC
	Dun Hollow	+/-	0	+	NC	NC	NC
	Plummet	++	++	+	NC	NC	NC
	Proville	-	-	++	NC	NC	NC
	Tindale	+/-	0	++	NC	NC	NC

Attitudes:

— = unfavorable
- = skeptical
+/- = uncertain/mixed feelings
0 = neutral, mild positive
+ = favorable
++ = enthusiastic

NC = no change from initial attitude

p = "pioneer" users
ot = other teachers

Looking further along, only users and principals at NDN sites seem to change their minds, always in a more favorable direction. This involved reassurances (Calston, Masepa), or liberties to make changes (Astoria, Burton), given from the central office. Generally, though, it seems that first impressions last.

Since it is difficult to make a sharp comparison across sites and informants from Chart 10, we summarize it in Table 9. Some new trends are evident. While the profile for principals and central office staff is similar for both NDN and IV-C, NDN users are more favorable at the outset. The neutrality of principals also comes across more clearly; it reflects their often-passive role in the face of energetic, pressuring central office administrators, virtually all of whom are favorable. Note, too, that users are split---they either approve or disapprove. As the old union song goes, "They say in Harlan County/There are no neutrals there."

Table 9; Summary; Attitudes by Role, at Time of First Implementation

	USERS			PRINCIPALS			CENT.OFFICE		
	Neg./ mixed	Neut.	Pos.	Neg./ mixed	Neut	Pos.	Neg./ mixed	Neut.	Pos.
NDN(7)	1	0	6	1	2	4	0	1	6
IV-C(5)	3(1)*	0	1(1)x	1	2	2	0	0	5
Totals	4(1)	0	7(1)	2	4	6	0	1	11

*"other teachers" at Carson
x "pioneers" at Carson

Conclusions

By the time these innovations were formally adopted, most parties concerned were favorable, although teachers had been initially polarized between enthusiasts and skeptics. Initial bones of contention had apparently been negotiated away, notably by allowing users some latitude in the ways they could execute the project.

Whether local actors initially liked or disliked the innovation and were inclined to put it into practice was a function of their initial perceptions—how it looked when first presented to them—and of their estimates of the changes implied by the new practice at the classroom and building levels. In their initial size-up of the project, most users felt that it was complex, hard to do, unclear and flexible—often too flexible. Administrators tended to see the same project as simpler, clearer and more manageable, and spent time reassuring the first generation of users. At NDN sites, both users and administrators were sometimes lulled into complacency by observing the apparent effortlessness with which staff at the demonstration sites managed the new practice.

Initial attitudes were also a function of *goodness of personal fit* for prospective users: how it "felt" at first blush, how it interacted with congenial ways of working with pupils, how familiar it was ("under my belt...in my routine") and how well it corresponded to personal norms and values. Fit was judged fair to good overall.

Users at over half the sites initially *anticipated* high *classroom change*: different materials, instructional sequences, curricula, evaluation formats and the loss of familiar props, such as workbooks and teachers' manuals. Administrators, by contrast, saw varying amounts of *anticipated organizational change* resulting eventually from adoption. Some were trivial (e.g., transportation), others momentous (e.g., creating a new institution). Such changes were structural (creation of a new unit), procedural (e.g., rescheduling) or climate-related (e.g., different attitudes toward low-achieving pupils), the last type being hard to see before jumping in. Sites also varied on *goodness of organizational fit*, the demandingness or stress-ratio of a proposed innovation. Administrators tended to overweight potential benefits and underweight potential drawbacks.

Other variables facilitating adoption included *administrative pressure*, *the perception that the practice solved a local problem*, the project's *relative advantage* ("it looked good") and *latitude* given users to make changes during execution.

Early Implementation

Introduction/Overview of Findings

One of the reasons why innovations are, almost by definition, exceptional is that innovating is often painful. Changing instructional and management practices frequently involves confusion, self-doubt, temporary setbacks, plateaus that seem to last forever, new procedures for daily work, shifts in institutional influence and other uncertainty-arousing events that most people would rather not endure on a regular basis. We found that successful implementation usually entailed anticipating these events and taking measures to reduce their intensity or duration. Even if no particular steps were taken, innovations that made heavy demands on users' energy and tolerance for uncertainty usually wound down over time to a more energy-conserving, routinized, streamlined version (see Chapter V, pp. 215-249 on changes in the innovation, and pp. 277-310 on organizational changes).

Reviewing the 12 field sites, we estimated that over half (7) went through a very difficult initial implementation phase and only 3 experienced smooth early execution.* We should note that the 3 sites judged to be the most successful in terms of ultimate outcomes —Plummet, Masepa and Tindale — were among the 7 with a rough start-up phase. It was also noteworthy that all 5 IV-C sites (who were struggling with local development of the innovation) underwent a rough start-up, while the NDN sample was more various.

---

* The duration of "early implementation" was elastic. One field researcher judged it as the first 8 weeks, another as the first year and a half. However, the mode for site reports was the first full school year. When site informants were asked to break up their experience with the innovation into phases, their estimates also varied widely, even among the same generation of users at the same site. If the question was asked, "When did you feel you were getting on top of it?" responses (even within a site) ranged from 3 months to 2 years, with the mode at 1 school year.

We tried to chart the course of early implementation by observing it where we could, and by asking local site people about their feelings and concerns during the first months, along with their day-to-day actions, their understanding of the project, and their difficulties in getting the new practice to work as they wanted. Consonant with the more micro-analytical research into the implementation of innovations and the concerns of users (Hall et al, 1975; Hall, 1976), we found that initial use is associated with a fragmented and disjointed attempt to master the component parts of the new practice, and with a focus on concerns that are often more self-centered than task-centered or pupil-centered. We also found that the initial understanding of the practice and of how to use it successfully follows a classic pattern in cognitive learning theory: the novice has an undifferentiated view of the practice and sees it as jumbled, random or otherwise unintegrated. Fragmented mastery, self-absorbing worries and confusion about how the practice is actually supposed to work all make for a difficult jumping-in phase.

In trying to see which factors distinguished smooth-starting from rough-starting innovations, we looked first in the most obvious place: preparedness. On the whole, better-prepared projects -- those with strong local commitment, good understanding, adequate resources and materials, requisite skills and initial training, provisions for de-bugging and follow-up consulting, and building-level support -- fared better than those with less readiness. But no site was uniformly well-prepared.

Degree of pre-implementation readiness was often a necessary but not a sufficient cause of smooth or rough start-up. There were other factors operating diversely as barriers or facilitators of early implementation. These included the following: organization- and classroom-level constraints, degree of practice change for users, size and scope of the innovation, and the latitude accorded to users to trim or reconfigure the practice in the course of early program execution. Our method was to array the 12 sites on all these dimensions, and assess whether and how each one acting alone or in concert with others affected early implementation.

Next, we walk through our findings in detail. Beginning with an overview of the users' early attempts to master and understand the new practice, we then survey teachers' salient concerns during early use. Finally, we look into the range of factors that account for the shape and relative smoothness of early implementation.

Mastering the Innovation

Mastery is both a process -- it has several stages or phases -- and an accomplishment -- later phases are more "masterful" than earlier ones. For some of our informants, the process was initially very long and the accomplishments meager. Two illustrations:

> I got into it. I fell down and I had to pick myself up. That happened a lot of times. I'm just beginning to walk. (Teacher at Masepa)
>
> Every day, one of us would say, "We'll never do that again," or "This works; we'd better keep this." And that's basically how we got through the year. That's what it was, too — getting through the year. (Teacher at Banestown)

Even at sites where initial program execution had been relatively smooth, the same configuration of behaviors recurs, although less acutely:

day-to-day coping, unsuccessful attempts to "make it work like it's supposed to," inability to get through a daily or weekly segment, successive cycles of trial-and-error and difficulty in doing the new practice without sacrificing other core activities. This configuration is well captured by Loucks et al. (1975) in their Levels of Use sequence of innovation mastery, notably in their initial implementation phase, which they call "mechanical use:"

> State in which the user focusses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often re-resulting in disjointed and superficial use.

Typical difficulties. Reading through users' comments at the field sites, one finds three typical mastery-related difficulties mentioned during initial program execution. First, there are too many, apparently simultaneous, tasks to do in the time available. Users are "overloaded" and complain of depleted energy, of "so much coming at me," and of not being able to keep up. Over time, as we see later, they will resolve this problem by 'chunking' together different segments, trimming difficult or time-consuming parts and developing time-saving algorithms that work something like this: when only a week is left, select part x, combine y and z, shorten a,b,c. Second, users say they can't anticipate the immediate consequences of their actions. Trying the same materials the same way for the same children turns out differently each time. This leads to repeated cycles of trial-and-error to see whether varying an instructional sequence or grouping children differently has any consistent effect. Gradually, consistencies do emerge, so that users can predict likely effects of their treatments and can build on the growing store of action algorithms, by adding several like this: *when I try x together with y, I can usually get z*. A related problem here is that pupils' behavior is erratic, often as a result of the changes introduced in the classroom; this adds to the general level of uncertainty and unpredictability. Gradually, the pupils will be 'grooved' into a new habit pattern, and the problem largely resolved.

The third theme in the litany of early implementation difficulties involves lack of understanding. Users say they don't see how the project really works, how the parts fit together. They talk of a "global," "vague," "jumbled," "confused" or "fuzzy" understanding of how one gets from the objectives to actual day-to-day organization, and from there to the desired outcomes:

> I didn't understand why I was doing what I was doing...I didn't see how the whole thing came together. (Teacher at Masepa)

> I thought it was just a spelling program and there was something about commercial materials and "catching up," but that's about it. (Teacher at Banestown)

In cognitive terms, there are two things going on here. First, users' understanding is *undifferentiated*; they have only a "vague" idea of what the new practice entails; they know only globally "what it's about." Secondly, their understanding is made up of *unintegrated* fragments; they see several different parts that don't fit easily together. They are operating with a primitive mental road map that has only the major thoroughfares and contains several uncharted areas. As we saw, their instructional or managerial behaviors related to the innovation are also primitive, partly as a function of their level of understanding. Later, as trial-and-error cycles turn up consistencies, some notions of what underlies those consistencies and a large set of action algorithms, their road maps will become far more detailed and interlocking, contributing in turn to more economical and effective results in day-to-day work. An important corollary here is that understanding of the innovation appears to be achieved — something that gradually emerges from doing it and making sense of what happens as a result — rather than something that comes before program execution. For example, several informants said they thought they had understood the structure and procedures of the innovation ----until they actually had to execute it, and found out the extent of their misunderstanding. Our finding here is closely allied to Fullan's (1982) emphasis on the centrality of achieved meaning during the implementation process.

Feelings and Concerns during Early Use

Many of the initial concerns of users were a function of what was happening to them: their poor understanding of the practice, their stumbling through the day, or their inability to keep up with the prescribed or recommended program. So informants spoke, logically enough, of feelings of confusion, inadequacy and exhaustion or discouragement. At a few sites, there was variability; some suffered less than others, and these people tended to be more experienced or to play more marginal roles in the project. But for the most part, there were similar concerns and emotions of users at the same site. Everyone muddled through.

When we look into the content of these concerns, we find, as did Hall (1975) that much of it is self-centered. It's as if users are so flooded with the difficult experience of day-to-day coping that they have little attention available for the problems of pupils or peers. Strictly speaking, of course, these concerns overlap and feed one another. For instance, it was often because pupils did not seem to be taking to the innovation that teachers felt anxious and vulnerable. But the direct object of their worries, as it were, was themselves. When teachers were troubled, for example, about sections of the standard curriculum they were leaving out as a result of the time needed to do the new program, they talked less about the effects on their pupils than about how "it could get me in trouble."

It is not easy to catalogue these early concerns without some conceptual force-fitting. Perhaps the most straightforward procedure is to give a general idea of what users were worried about, how this was expressed and what kind of emotion it appeared to evoke. Taking only items mentioned in at least 3 sites, here is a summary array:

Area of Concern	How Expressed	Chief Emotion
Professional adequacy	"Am I doing it right?" "Can I deliver...am I up to it?" "What do the others think of me?"	Apprehension, inadequacy
Flaws in the innovation or in its execution	"It wasn't working like it did at the trainer's site." "The kids didn't like it... weren't adjusting to it."	Confusion, anxiety
Bad institutional fallout	"Shabby kids could get us into trouble." "I had to sacrifice two reading periods; I couldn't keep doing that."	Apprehension
Stamina	"Barely hanging on"... "Too much work"..."couldn't keep it up"... "Thought I was never going to get on top of it."	Distress, discouragement, exhaustion

More of the flavor and density of these concerns comes through when we see them in an untruncated form. Staying within one site (Banestown), here are excerpts from different teachers on 3 of the above-mentioned areas of concern:

> Adequacy: I was afraid the children would go out and tell what they were doing and it wouldn't be good, and [about] what some of the other teachers and aides would think.
>
> Flaws: I wanted it to be like it was supposed to be and I don't think it was [during the first year]. I couldn't get it. They [at the training site] were so individualized and they were so sure of what they were doing. Everything went so smoothly [for them].
>
> Stamina: I didn't think I could get it done. How to keep my head above water? [But] when I see kids, I can do it. You gotta do it.

Footnotes to the experience of initial use. Before moving on to the factors facilitating and impeding early implementation, three brief addenda are in order.

1. First-time users in successive years had an easier experience than first-time users in the initial year of implementation. In the interim, users and administrators had debugged the most egregious flaws and, in some cases, had caught up with the project in terms of infrastructure and supporting resources. The tradeoff was that second-generation users were often less committed than the "pioneers."

2. The number and gravity of initial difficulties took their toll on the organizational climate (see pp. 284-287 on transitory organizational changes); at some sites, project staff became defensive and accusatory toward one another.

3. Administrators saw fewer and less serious problems during initial use than did users, unless the thrust of the innovation was primarily administrative (e.g., creation of a sub-system, rescheduling and reallocation of pupils and staff).

Factors Contributing to Successful Early Use

When informants were asked to explain why their early experience had been rough or smooth, they usually mentioned the adequacy of their own preparation or of logistical arrangements at the local site. The main message was that something had been rushed, wasn't ready, wasn't well designed, wasn't available when needed or couldn't be done as expected (because it was rushed or poorly designed). We tried to unbundle the several components of preparedness and asked informants about the extent to which, in retrospect, each component had been in place prior to project execution or, in some cases (e.g., de-bugging, consulting, reviewing progress) was provided during early use. Chart 11 arrays these responses, aggregated to the site level, by category and adequacy of preparedness, and breaks them down according to the relative smoothness of early use.

We shall look at the chart piece by piece. Note first that the majority of sites had a rough start-up phase. Note next that all 5 IV-C projects are rough beginners, while the NDN sites have an easier time overall. This is an interesting finding. Theoretically, IV-C projects have a separate "development" phase during which local developers (usually administrators, teachers) work to develop the innovation and ready it for local use. Presumably, this phase secures the necessary commitment, support and understanding, even if all the logistics aren't worked out But the table (see "preparedness" score) shows IV-C projects --perhaps because they are still being "developed"--to be less well prepared than NDN sites. Although IV-C sites are equal to or slightly better than NDN projects in the commitment-support-understanding categories, they are far weaker in the resource-skill-training-debugging categories. So lack of technical readiness seems to hurt more than the presence of attitudinal or cognitive readiness helps, at least in the initial phase. That NDN projects are better geared up technically attests to the relative sophistication of the delivery mechanisms in the National Diffusion Network: generating

Chart 11: Degree of Preparedness as Related to Ease of Early Implementation at Field Sites (First Generation of Users)

Ease of early use,[a] by sites	Commitment			Understanding									
	Users	Building Principal	Central Office Admin.	Users	Building Principal	Central Office Admin.	Resources/ Materials	Skills	Training	Preparedness Score#	Group Median	Ongoing aid/ in-service	Building-level support
Smooth early use													
Astoria (NDN)	✓	✓	✓	✓	✓	✓	✓	✓	(✓)	19	18	✓	(✓)
Burton (NDN)	(✓)	(✓)	✓F	(✓)	0	✓F	✓F	(✓)	✓	17		(✓)	(✓)
Mostly smooth													
Lido (NDN)	✓F	✓	?	(✓)	(✓)	?	✓F	(✓)	✓	17	17	0	✓F
Mixed[b]													
Caleton (NDN)	✓	✓	✓F	(✓)	(✓)	✓	0B	(✓)F	✓	16	15.5	(✓)B	✓
Perry-Parkdale (NDN)	✓F	0		✓	0	✓	✓	(✓)B	✓	15		(✓)	(✓)
Rough													
Banestown (NDN)	✓F	(✓)	✓F	(✓)	0	(✓)	(✓)B	(✓)B	✓B	12	13	(✓)F	✓
Masepa (NDN)	✓	(✓)	✓F	0B	0	(✓)	0B	0B	(✓)	8		✓F	(✓)
Carson (IV-C)	✓F	✓F	✓	(✓)B	(✓)	(✓)	(✓)	(✓)B	(✓)B	16		✓F	✓
Dun Hollow (IV-C)	(✓)	(✓)	(✓)	✓	✓	✓	(✓)B	✓F	(✓)	14		(✓)	(✓)
Plummet (IV-C)	(✓)	(✓)	✓	(✓)	(✓)B	(✓)	(✓)B	(✓)F	0	14		(✓)	✓
Proville (IV-C)	(✓)B	(✓)B	✓F	(✓)	(✓)	(✓)B	(✓)	(✓)	(✓)	10		(✓)	(✓)
Tindale (IV-C)	0B	✓F	✓F/B	(✓)	✓	✓	✓F/B	(✓)	✓	13		✓F/B	✓

---

[a] field researcher judgment from users' responses and/or from observation of practice in use

[b] smooth for some users, rough for others

underline signifies field researcher estimate that factor was decisive in affecting ease of early use

F = factor facilitated early use
B = factor was barrier to successful early use
✓ fully in place
(✓) partly in place
0 mostly absent, missing
? missing data

#Computed in the following way:

✓ = 2 pts.
(✓) = 1 pt.
0 = 0 pts.
F = +1 pt.
B = -1 pt.

BEST COPY AVAILABLE

awareness, arranging for training and site visiting, emphasizing teacher-usable materials, and making provisions for follow-up consulting or turnkey-training. To judge from Chart 11, the delivery mechanisms in most cases heighten local preparedness and facilitate early implementation.*

Is a rough start fatal? To anticipate our later discussion of outcomes (see pp.431 ff.), the answer is "yes and no." The most successful projects, as judged by our several impact and institutionalization measures, were all rough starters: Masepa, Plummet and Tindale. Two of them (Masepa, Tindale) were also poorly prepared. On the other hand, the 2 most unsuccessful innovations (at Dun Hollow and Proville) were also rough starters and poorly-prepared sites. Clearly, we need to look at more predictors.

Relative degree of preparedness. Move now to the final two columns, where we have done some rudimentary computations to see whether smoothness of early use is related to degree of preparedness. This scorecard seems to say there is a linear relationship -- smoothness goes with preparedness — although we have few cases overall and there are some mavericks (e.g., Carson). Also, the "commitment-support" scores are probably overweighted (they make up one-third of the total items) -- which is, incidentally, how Carson got a relatively high preparedness score. The predictive value of the preparedness measure looks even better if we refine the scores within the "rough" group. Separating out the rough starters (Carson, Dun Hollow, Tindale) from the very rough — as one user put it, "nightmarish" — starters (Banestown, Masepa, Plummet, Proville), the first group median is 14 and the second is 11. So we have a gross ordinal scale of preparedness corresponding closely to a similarly rough index of facility of early use.

---

*Other factors may be at work here too. IV-C innovations tended to be bigger and more demanding than NDN ones, on the average (see p. 130); the very fact that local development is occurring may kick up more personal and political issues than when an existing "package" from outside is being implemented.

To illustrate early implementation experience, we have excerpted from the case reports some users' comments on their early experience with the innovation, given us when we asked specific interview questions. On the next page (Charts 12 and 13) we see first a summary table from the Lido site, where early implementation was fairly smooth, and, for counterpoint, an excerpt from the corresponding summary chart at Masepa, where initial use was very rough. The contrast is instructive. Users at Lido are doing the innovation, while those at Masepa are largely, as one said, "just trying to survive." Also, comparing the entries for "feelings/concerns" and "problems" for the two charts, we can see that the Lido informants are not complaining about inadequate readiness, while the Masepa informants are communicating a strong sense of "unpreparedness." Column 3 on the Masepa chart explicitly addresses the readiness issue; reading laterally for each user yields a good image of how low preparedness is tied to rough initial use. One of the Masepa teachers put it more graphically:

> Nothing was really ready. They told us one thing and then a few weeks later they told us another thing. They should have waited a year before anybody did it. We didn't get it at the workshops. The trainers weren't really that much ahead of the people who were just starting in...I had to make all the cards and all the charts...I thought more than once I was going to drop it, but I didn't...My husband said to me, "If this is teaching, it's craziness. I don't want you doing it."

Early Experience and the Components of Preparedness

Given this brief familiarization with the nature of rough and smooth early implementation, let us return to Chart 11, to examine in turn each of the factors we considered part of "preparedness."

Chart 12: Users' Early Implementation Experience at Lido(NDN)

USERS	FEELINGS/CONCERNS	UNDERSTANDING/ HOW INNOVATION LOOKED	WHAT WAS USER DOING MOST?	PROBLEMS
Vance	How to move to a more flexible teaching style Apprehension about kids outside, control, etc.	Some activities built into regular curriculum; some had to be cut or adapted to kids, time	Reading all of materials Trying activities first Working w/ shop people, community people Caring for off-campus site	Gaining new sense of control when outside Loosening up authoritarian style w/ kids
Drew	Starting first teaching job--innovation was part of the job	Clear, well done, and interesting--useful as a resource	Reading materials Working w/ shop, library Learning ropes of new job Caring for off-campus site	Working w/ achievers & non-achievers in same class
Carroll	Relief at arrival of much-needed resources How to use most effectively	Good philosophical fit with own teaching Interesting activities	Working w/ community people Working out admin details Caring for off-campus site Aiding other user	Establishing suitable parameters w/ park grp Getting 2nd bus, released time for users

Chart 13: Users' Early Implementation Experience at Masepa (NDN)

USERS	FEELINGS/CONCERNS	UNDERSTANDING/HOW INNOVATION LOOKED	PARTS READY (+) NOT READY (-) *	WHAT WAS USER DOING MOST?	PROBLEMS
R. Quint	"Can't memorize it all" "Can't keep it up - exhausted" "How to get it all in?" "Monotonous - same thing every day" "Some pupils are revolting"	"Didn't think about it.. didn't understand why doing what doing"	+Small repertoire for skills cycle +General formula for practice time -Never ready for the next day	Making materials Conferring, exchanging materials with others "Trial and error" "Just trying to survive"	"Groping all the time"
F. Morelly	Can't do it all in allotted time, uncomfortable with directives, "never going to get on top of it"	"Skeleton" clearer now, "beginning to fall a little into place"	+Materials for most basic parts -Exercises, activities for comprehension skills -"Too slow in learning a few short-cuts"	Memorizing steps Lockstepping pupils for practice time	Frustrated - program inapplicable for non-readers
L. Brent	"So much pressure" Orphaned - "no structure, no manual" "Am I harming the children?"	"Completely puzzled" Arbitrary, unconnected drills and exercises; "too many things at once"	"Nothing was ready, just a few words"	Struggling to keep up; preparing, organizing word charts, cards; trying to make lockstepping work	Lock-step procedures not working - (took 6 weeks)

* Data collected on this item at Masepa, but not at Lido.

BEST COPY AVAILABLE

Commitment. Levels of commitment for all 3 categories of informant are, for the most part, adequate. Note that levels of user commitment are fairly similar to building administrators', and that both are lower than for central office administrators. Here is still another indication that many of these innovations — and, looking at Chart 11, NDN projects in particular — are being championed by central office administrators and offered to, sold to, or forced upon principals and teachers.

There is also a tendency for commitment on the part of all 3 informant categories to matter more when early implementation is rough. Note the numerous underlines, signifying informants' and site researchers' estimates that the presence or absence of local engagement strongly influenced the smoothness of early implementation. When initial use was difficult, strong commitment expressed itself in two ways: (a) by carrying users through the rough spots as they "kept the faith," and (b) by galvanizing building principals and central office staff to provide more support. This was the scenario at Banestown, Maseps, Carson and Plummet — especially in the latter 2 cases, where the innovation had a strong ideological core. At Proville, low levels of user and principal commitment crippled the innovation from the start, despite the efforts of the local developer in the central office. Tindale was a more complex case. Teachers were forced to use the program by resolute administrators convinced of its merits. Strong-arming recalcitrant early users created ill will, which was in part assuaged by administrative support when users ran into trouble. So commitment is an important factor.

Understanding. Chart 11 shows, as we hinted earlier, that few site personnel know what they are in for before they get into the innovation on a daily basis. Here again, central office administrators have as good—or as poor—an understanding as users, and a clearer vision than building administrators. Understanding draws few underlines. Having more of it doesn't seem to facilitate the course of early implementation, although having less does appear to make things worse for sites already in trouble. General bewilderment about how the new practice actually worked increased the levels of confusion and anxiety at Carson and Masepa. At Plummet and Proville, key administrators only very gradually got a clear idea of what they wanted to happen; this disoriented users in the participating schools.

Resources and materials. The presence or absence of these affected initial use decisively in 7 of the 12 sites. Moreover, this variable does better than most at discriminating between the smooth beginners, where it facilitates early efforts, and the rough beginners, where lack of it is a handicap. We should remember that many of these new practices are heavily materials-centered——packages, curricula, testing and diagnostic devices — so that successful use depends on the materials' quality and availability. At Burton and Lido, the materials were both good and available when needed. At Calston and Masepa they were satisfactory but unavailable or insufficient in number. At Banestown, Dun Hollow, and Plummet, the materials didn't work well; since virtually the entire project -- especially at Banestown and Dun Hollow -- hung on their quality, early implementation was compromised, with few alternatives at hand. To illustrate with a teacher's remarks at Dun Hollow:

> It was as though they picked some arbitrary point in history. It had no beginning or end, and there was no connection between the 18th and 20th centuries...The focus wasn't clear, and we began to wonder if it was really worth all of this time.

Finally, Tindale was again a more convoluted case. Most of the materials were good, but there were too many of them. Since users were expected to use them all, early efforts led to overload, resentment and some randomness in instructional sequencing.

Skills and training. These factors are related both conceptually and empirically, so we will look at them together. Chart 11 indicates that NDN sites geared up users better than did IV-C sites, and that both factors made more of a difference in the rough-starting projects than in the smooth-starting ones. At two sites weak training and low skill levels served as barriers to smooth implementation. Training at Banestown consisted of a breathless hit-and-run visit to the program developer's site, and users at Carson felt they were inadequately prepared to take on the complex and many-faceted program they found themselves contending with during the initial months. In both cases, lack of formal initial preparation got the sites into trouble.

But training as such, curiously enough, seemed not to affect strongly the relative smoothness of early implementation at all the other sites. What seemed to matter more was the pre-existing instructional or managerial skills repertoire of those using the program. Calston, Dun Hollow and Plummet might all have closed down after 3 months had local staff not been so skilled as a result of earlier or cumulative experience in the same area. For instance, the innovation at Dun Hollow was poorly designed; local teachers trimmed, added to and reconfigured it on the fly and, at the same time, meshed it with the conventional social studies curriculum. At Calston, the materials arrived late, crowded out other segments of the language arts curriculum, and fragmented teacher monitoring of seatwork.

But the staff coped reasonably well, largely because, as one teacher put it, "I have a lot of these types of programs under my belt."

So training is, surprisingly, a minor contributor by itself to the relative smoothness of early experience at NDN and IV-C sites. It operates more influentially *in conjunction* with other, more influential variables, notably prior skills. As we just saw, high levels of instructional skill can compensate for inadequate initial training (e.g., Plummet and Dun Hollow). What about *low* levels of prior instructional skills? Chart 11 shows that inadequate skills created problems in early use at Banestown, Masepa, Perry-Parkdale and Carson. The data from these sites show, however, that users were not lacking in teaching experience nor in general instructional mastery, but that their existing repertoires were *inappropriate*. The degree and kind of practice change required to use the innovation successfully were substantial. For example, teachers at Masepa were used to teachers' manuals, workbooks and worksheets and whole group instruction. As they began to implement the new language arts program, they found themselves without any of these props, and with a highly individualized, pupil-run pacing that seemed, at first, unmanageable. Skimpy preparation exacerbated similar problems at Banestown, Masepa and Carson, but more training at that point would not necessarily have resolved them, judging from Chart 11.

On balance, it is not unreasonable to find that pre-implementation training is only a weak determinant of successful early use. Looking across these projects, the actual time and effort invested in training was modest. Also, some of the projects were so complex or ambitious (for ex., Plummet, Carson, Masepa) that formal preparation could only provide a taste of what was to come--and may even have added to the confusion and ambivalence which, as we have seen, is a normal accompaniment of significant change. Other innovations (those, for example, at Dun users could pick and choose at discretion, so that training was largely superfluous. Note that we have already run through half of the 12 projects. Adding the remaining 6 sites, it would probably be more accurate to talk about initial "exposure" than about formal training. In most cases, users got a global understanding of the program components. Anxiety levels were lowered. Users could gauge the overall scope of practice change the innovation required of them. In the best cases, trainers modeled some of the teaching behaviors. Plans for the first weeks or months were drawn up. And users found out how much ongoing help they could count on,and where to request it. There was a general perception at most sites, which trainers also shared, that the course of early implementation was largely unpredictable, and that needs for assistance would become much clearer in a few months' time. This shifted the mental "set" of actors at the site from *preparing* for the innovation to *de-bugging* it.

Ongoing aid/in-service training. However, Chart 11 shows that the actual amount of such de-bugging was also modest. In other words, site personnel may well have stressed the *need* for ongoing assistance, but did not, in 9 of the 12 cases, *provide* very much of it — often because they had not put it in the implementation plan. In 6 of the 9 cases, weak ongoing assistance does not appear to have made much difference. Smoothly-implementing sites were not hurt by the lack of ongoing assistance (with the exception of Calston, where assistance from trainers that had been *promised* and *planned* was not delivered when needed). Roughly-implementing sites fall into two categories: places where the lack of ongoing aid was not a strongly contributing cause (Perry-Parkdale, Dun Hollow, Plummet, Proville) and places where provisions for de-bugging markedly facilitated early use (Banestown, Masepa, Carson). Tindale is, here again, more perverse. Here, early back-up efforts were considerable and clearly helped:

> The reading consultants at each school, who had also written the curriculum, were asked to aid teachers by gathering and duplicating materials, doing on-the-spot troubleshooting and answering questions about the guide. They each received one period of released time per day for these activities. Teams met individually at least once a week, and all 3 teams met 2 or 3 times a month together at paid in-service sessions. [There was] extensive monitoring of teachers and the program for debugging and evaluation purposes. (Site report from Tindale)

But users at Tindale described the monitoring component as "horrid", and felt it contributed to the "atmosphere of fear and resentment" that seemed to prevail during the first year of use.

At Masepa, and to a slightly lesser extent, at Carson, the presence of an ongoing monitoring-support-debugging function helped to salvage an innovation that otherwise might have gone under after a rocky start. At Masepa, for example, teachers were ready to give up after the initial 2 months. The program survived, according to virtually all informants, because local administrators were supportive and because a part-time "helping teacher" made materials, held weekly meetings, held hands, encouraged teachers to stay with whatever seemed to work for them, and authorized the bootlegging of workbooks and worksheets back into the reading program. One of the first-generation users renders the experience well:

> They kept saying, "We'll help you, we'll help you." We kept saying, "I'm never going to be able to do it." But, you know, you attack it and you do it. (Teacher at Masepa)

These three cases -- Tindale, Masepa and Carson -- are illuminating in that they all began roughly, but provided consistent and many-pronged assistance that gradually turned into a well-oiled integrated infrastructure consisting of periodic meetings, in-service training, continuous monitoring, yearly updating and revisions, and occasional recourse to outside consultants. One consequence was that second-generation users had a far smoother initial experience. And as the program became locally institutionalized, the support structure remained largely intact, so that the project enjoyed some institutional "slack" and could attend to its ongoing improvement. The presence of a durable support structure may be one of the prime factors accounting for the ultimate success of the innovations at these three sites.

Building-level support. Chart 11 shows that, in the initial phases of these projects, building-level support was spotty. The ratings of smoothly-beginning projects are no different from the others, and only in one case — Lido — does such support shape the course of early implementation. This instance is instructive; Lido is the only case where the energy for both adopting and implementing the innovation came from within the school building, rather than being initiated or propelled out of the central office. At Lido, active support from the principal helped science teachers make the transition from an academic to a more-experimental curriculum. Elsewhere, the modal attitude of principals at the start was often that of benign neglect or casual benevolence -- helping out by using the resources at hand through authorizations, materials and released time.

Other Influences in Early Implementation

So far we do not have very decisive explanations. If we take the total pool of readiness indices (132), only about a third (42) are underlined as being strong influences on the course of early use. In a gross way, it looks as if initial "preparedness", plus (possibly) ongoing assistance, aid early smoothness. But we don't get a good picture of how this is working. Furthermore, being well geared-up somehow doesn't seem to help as much as being poorly geared-up can hurt the process. At "smooth" sites (Astoria, Burton and Lido) something else must be at work (note that for Astoria not one of the eleven predictive factors was a strong determinant of smoothness). So we must look elsewhere to develop a fuller explanation for the success of early implementation.

Chart 14 tries to do just that by listing other determining factors during early implementation that were identified by informants and field researchers. Let us first define and survey briefly the variables in the column headings.

Users volunteered vs. pressured. This is an estimate of the degree to which first-generation users were willing or conscripted parties to the innovation. (Recall that there was more conscription among the second-generation users.) Note that, in general, volunteerism is a facilitator and pressure a barrier, although for half the cases this variable was not judged a decisive one.

Where pressure was a decisive factor, there appeared to be several scenarios. In smoothly-implementing sites, like Burton and Lido, users' volunteerism involved negotiations with administrators to permit changes in the innovation (latitude) that would ease early use.

In sites with early roughness, there were two "pressure" scenarios. At Tindale, forced compliance simply meant that most users were using a new practice they abhorred. They resisted passively, making things harder

Chart 14: Additional Factors Related to Early Implementation

Ease of early use, by sites	Users (1st generation) volunteered or pressured	Actual classroom/ organizational fit	Actual degree of practice change	Latitude for making changes	Actual size/scope of innovation +
Smooth early use[a]					
Astoria (NDN)	pressured	good$_F$	minor$_F$	high$_F$	small
Burton (NDN)	pressured$_F$	good$_F$	minor$_F$	high$_F$	small$_F$
Mostly smooth					
Lido (NDN)	pressured$_F$	moderate$_B$	moderate$_B$	high$_F$	small/moderate
Mixed[b]					
Calston (NDN)	pressured	poor$_B$	moderate$_B$	mod./high$_B$	small
Perry-Parkdale (NDN)	volunteered	moderate	moderate$_B$	high$_F$	moderate
Rough					
Banestown (NDN)	pressured	moderate	major$_B$	high$_F$	small/moderate
Masepa (NDN)	volunteered	good	major$_B$	low$_B$	large
Carson (IV-C)	volunteered$_F$	moderate	major$_B$	high/mod$_F$	large$_B$
Dun Hollow (IV-C)	volunteered	poor$_B$	minor$_F$	moderate	small$_F$
Plummet (IV-C)	volunteered$_F$	poor$_B$	moderate-major$_B$	high$_F$	large$_B$
Proville (IV-C)	pressured$_B$	moderate	minor	high	moderate$^*_B$
Tindale (IV-C)	pressured$_B$	moderate$_B$	major$_B$	low$_B$	moderate/large

---

[a] field researcher judgment from users' responses and/or from observation of practice in use

[b] smooth for some users, rough for others

underline signifies researcher estimate that factor was decisive in affecting ease of early use

F= factor facilitated early use

B= factor was a barrier to successful early use

* substantial role changes, but for limited populations

+ as contrasted with pre-implementation size/scope. For comparison, see Chart 4, "implementation requirements".

BEST COPY AVAILABLE

for themselves as administrators gave little latitude, insisting on orthodox use from the start. And in Proville, passive resistance led to spotty and somewhat chaotic early implementation, as building administrators made only ceremonial attempts to recruit participating teachers.

Finally, at Carson and Plummet, volunteerism seemed to heighten the commitment of early users, enabling them to keep going through the rocky period of initial use.

Actual classroom/organizational fit. This variable refers to problems encountered early on by users trying to integrate the innovation into ongoing working arrangements. For example, at the Calston site the new reading program, if used as designed, tended to squeeze out parts of the core language arts curriculum. Note here that, logically enough, good fit is better;relatively good fit contributed to smoothness of early execution at Astoria and Burton, whereas moderate or poor fit caused problems, notably at 3 of the 7 rough-starting sites.

Actual degree of practice change. How much were users trying something new and different, in comparison with their prior practice? We estimated this by second-order analysis of users' and field researchers' descriptions of early experience. Scanning the column, this looks to be the single most influential variable. Minor practice change facilitates and major change impedes; rough-starting sites have comparatively more major changes to contend with than smooth-starting sites. The degree of practice change is judged an important predictor of early experience at all sites except Proville.

Note, too, that the IV-C sites experienced more-severe fit problems and a greater magnitude of practice change than did the NDN sites.

At some of the rough-starting sites, required changes in everyday classroom or school-wide practices were stark and immediate. For example, one user at Banestown said she was "so used to getting instructions; I don't know what to do on my own [with this project]." Another spoke of a "complete change" whereby she could no longer use workbooks, instructed the children for only 30 minutes ("They aren't my kids any more, just other teachers' kids coming to the lab.") and worked in a team with 2 other teachers ("I don't have my kids, I don't have my class like I used to."). Accounts from Masepa and Tindale are analogous, except that teachers complained more resentfully of imposed and policed practice changes they found uncongenial. Users at Carson stressed role changes, not only for teachers -- who had to do more diagnosis and counseling -- but for parents and to some extent students, who were expected to be more active. Elsewhere, the effects of practice change and of local fit problems were slower in making themselves felt and started out innocently enough, as a user at Perry-Parkdale put it, as "the complexity of many small unknowns."

Latitude for making changes. This variable refers to the degrees of freedom given to users by building-level and central office administrators for "bending" the innovation to fit personal styles and perceived local fit problems. This variable is discussed in greater detail in Chapter V, in relation to changes in the innovation during implementation. For our purposes here, it is noteworthy that moderate or high latitude is a facilitator and low latitude an impediment of early use at 10 of the 12 sites.

Size/scope of the innovation. Here we were concerned with the number of parts and the organizational complexity of the innovation. For example, the program at Burton was a minor add-on to the existing social studies program, whereas the innovation at Plummet was the creation of a complete alternative secondary school. Here as well, more is worse; for 5 of the sites at which this factor was influential, smallness was a blessing and large scale a bane.

Summary analysis. Stepping back a moment, how can we characterize smoothly-implementing sites, and how do they differ from the more problematic sites? (Keep in mind that smooth or rough early use does not necessarily predict final implementation success.) Starting with the family of smooth early users, Astoria, Burton and Lido are all characterized by relative smallness of scale, low-to-moderate degrees of practice change, good organizational fit, and wide latitude for making changes. These are "midget" innovations in terms of their scope and demands, when we contrast them with the teacher-transforming or institution-transforming innovations at Masepa, Carson and Plummet. They are not free of initial bugs; users at all 3 "smooth" sites reported problems — chiefly in relation to local fit and practice change — but saw them as transitory or minor difficulties. For example, users at Astoria complained of increased record-keeping and new groupings of pupils. At Burton, there was lack of necessary time for copying handouts, planning activities, pre-testing and tailoring the program to personal instructional styles. One user at Lido found it hard to loosen up "my authoritarian style"; another had difficulties working with high- and low-achieving pupils in the same group. But no one said "How did I get into this?", or spoke of "struggling to keep up," or of "barely hanging on," as did users at Banestown, Masepa or Carson.

There is an overriding reason why the smoothly-implementing sites are, in operational terms, midgets making few local demands: users get to shape them that way. These programs could have been giants -- or at least basketball player size. Had the full innovation-as-designed been implemented at Astoria, Burton and Lido, these sites would probably have joined the ranks of the rough-starting sites. To execute the remedial skills program fully at Astoria would have meant, in the words of one user, being "organized completely differently; I'd have to throw out my basal program." Similarly, the program at Burton, if used integrally, would have obliged users to use 'active' teaching techniques which were not in their repertoire, and to send pupils out and bring community people in, for which neither the school nor the users were prepared. Full use of the environmental science modules at Lido would have had similar consequences. In all three cases, local administrators colluded with users to scale down the project to easily manageable (and, as we shall see, less impactful) proportions. Users at Burton and Lido picked and chose at will from the program as a whole; users at Astoria implemented a small fraction of the project and shipped much of that to aides, parents and administrators outside the regular classroom. Classroom or organizational constraints were minor because the innovation was closely accommodated to existing arrangements. Users essentially did as much or as little as they desired, drawing on the discretionary latitude given them by principals or central office staff. In fact, the explicit (Burton and Lido) or implicit (Astoria) agreement between users and administrators prior to implementation was that the program as designed would be bent to fit user requirements.

By contrast, the roughly-implementing sites are, for the most part, the locus of ambitious, change-inducing, and organizationally problematic programs with variable latitude for user-level modifications. Users are doing something sharply different from what they normally do, while confronting a poor fit between the classroom or school and the heavy demands of the innovation. Some (Masepa, Tindale) have no authorization in initial phases to ease these demands. And most, as we saw earlier, are ill-prepared to take on an enterprise of this magnitude. In fact, the severity of the fit problems (incompatibility with classroom or school-wide procedures) and of the effective degree of practice change probably account in part for users' retrospective perception that they were not prepared prior to implementation.

Not all roughly-starting sites were organizationally and instructionally demanding. At Dun Hollow implementation ran into early trouble because the program was poorly designed. The modest ambitions of the program made it easy for users to recast it while executing it. At Proville, incomplete design, strong local resistance, and fairly cavalier administrative leadership all conspired to compromise early success.

Conclusions

Only three of the 12 field sites experienced a smooth early execution; over half, including all five IV-C sites, had a troublesome time. At the classroom level, teachers complained of day-to-day coping, unsuccessful attempts to "make it work like it's supposed to," continuous cycles of trial and error, inability to get through daily or weekly segments and the sacrifice of other core activities. Overall, difficulties were related to the overflow of apparently simultaneous tasks ("so much coming at me"), to unpredictability (sometimes a treatment works, sometimes it doesn't) and to a lack of understanding (lack of differentiation, an unintegrated mental road map).

As other researchers have found, users were self-preoccupied; whether pupils were profiting from the practice was a secondary concern at this stage. There were widespread feelings of apprehension, confusion and distress. Areas of concern included professional inadequacy ("not doing it "right"), flaws in the innovation ("not working like it should"), bad institutional fallout, and exhaustion ("barely hanging on.")

Several factors were identified that contributed to successful early use. General degree of preparedness was influential but not decisive. Smooth-starting sites were helped by the provision of resources and materials, a key provision since so many of these innovations were materials-centered. Rough starters were hurt by lack of user commitment and understanding of the practice, by lack of sufficient and available materials and by inadequate skills and training. Still, training was less crucial than prior experience—both its amount and the appropriateness to the demands of the innovation. Ongoing aid and in-service training were instrumental at rough-starting sites and seemed especially beneficial at sites that turned out later on to be the most change-inducing and best institutionalized.

Other variables discriminating between smooth and rough early use include administrative pressure (which made things worse for rough starters), actual classroom/organizational fit (better fit helped smooth use), actual degree of practice change (more change = more problems), latitude for making changes (a facilitator) and project scale (smallness goes with smoothness). Overall, smoothly-implementing sites seemed to have got that way by reducing scale, lowering the gradient of practice change, and thereby bettering local fit. Such "midgetizing" eliminated most of the potential headaches but also threw out most of the potential rewards. By contrast, roughly implementing sites remained ambitious, change-inducing and ill-fitting, with variable latitude, all of which made for difficult initial use.

Three questions arise from this portrayal of smooth and rough early experience: (1) What part does assistance of all sorts play in reducing roughness and aiding implementation? (2) Is later implementation smoother for sites with a difficult early experience? (3) Are there differences in intermediate or ultimate outcomes between the "midget" and more gargantuan projects: is more gained when more is ventured? We turn now to question 1, aiming to "unpack" the nature of assistance provided at our sites. Question 2 is discussed in the subsequent section (pp.177-212) and Question 3 is discussed at several points in Chapters V and VI.

The Role of Assistance

Introduction/Overview of Findings

Though more than one user in our sites said, "We did it ourselves," the actual picture is not one of heroic, isolated users struggling toward personal mastery and practice stabilization on their own. In point of fact, users——and administrators——often received assistance in their efforts in a variety of forms: training, supportive materials, debugging, controlling/pressuring, trouble-shooting, and just plain hand-holding. Assistance was an important part of what we have just been looking at as "preparation", it occurred during early implementation; and (as we shall see) played a strong part in later implementation as well.

In our site visits, we were interested in such questions as who the receivers and the givers of help were, and where both were located within and/or outside the social structure of the school; what the general orientations or role perspectives of assistance-givers seemed to be; what specific types of assistance were supplied; when assistance came during the implementation process; how different types of assistance were coordinated or combined; what receivers thought of assistance efforts; and what the consequences of assistance, both short- and long-term, appeared to be.

In brief, we found that there were real differences across sites; some gave intense, frequent, and sustained help to users, while others discontinued assistance soon after adoption, or made only weak efforts. Larger, more demanding innovations, accompanied by moderate funding, seemed to pull the most assistance, especially if users had little latitude to change the innovation, or used the latitude they had to give each other strong support. Rough starts seemed inevitable for larger innovations no matter what the assistance, but with sustained help they stabilized. Smaller innovations stabilized more quickly with less help.

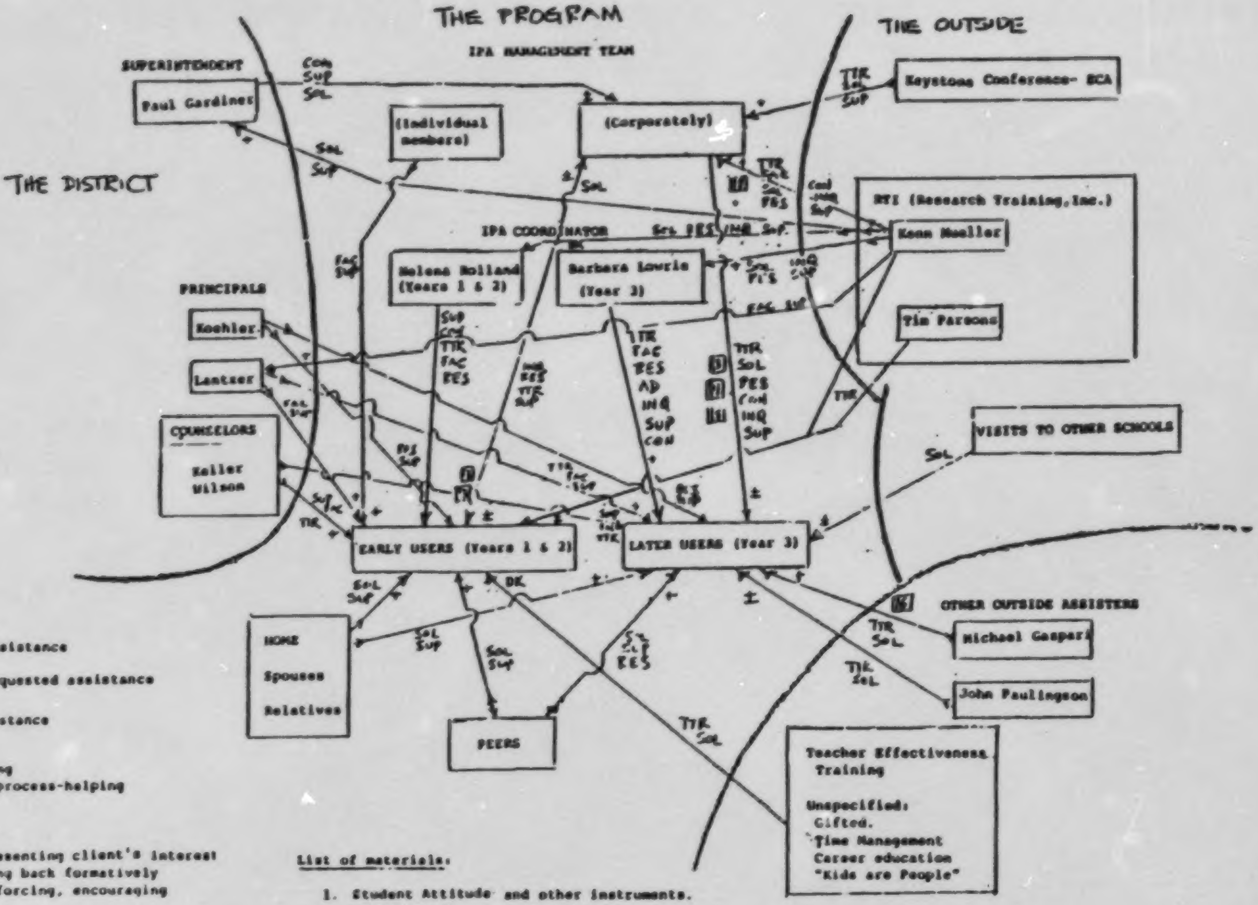
Our discussion of assistance begins with some sample displays from particular sites, to provide a flavor of the sort of data we were able to marshal on a site-by-site basis. Then we turn to summarizing the sources and amounts of assistance received---and by whom---across the 12 sites. The next section examines the nature of assistance offered: what types of assistance were offered at different stages, before and during implementation? Next we re-examine the effects of assistance on individuals and the schools. Finally, we look both at antecedents of assistance---what caused it to appear in our sites---and its general consequences in terms of early and later implementation effectiveness.

Examples of Assistance at the Site Level

Our sites varied substantially in what we called the "presence"—the density or completeness—of assistance provided. Figures 3 and 4, respectively, show what the assistance picture looked like at Carson, a site with a substantial assistance presence, and at Calston, where modest "front-end" assistance was supplied, with little support later on.

The Carson program, aimed at individualizing education for all district students, was steered by a "Management Team" or steering committee, had a special program coordinator, and used outside consultants liberally----especially an external evaluator ("We never could have done it without Kenn."), who supplied program design, training and facilitative

Fig. 3: Location and Orientation of Assistance During Planning and Implementation, Carson Site


THE PROGRAM
IPA MANAGEMENT TEAM
THE OUTSIDE
THE DISTRICT
SUPERINTENDENT
Paul Gardiner
CON SUP SOL
(Individual members)
(Corporately)
SOL SUP
SOL
Keystone Conference- ECA
TTR SOL SUP
RTI (Research Training, Inc.)
Kenn Mueller
Tim Parsons
CON INQ SUP
IPA COORDINATOR
SOL RES INQ SUP
Helena Rolland (Years 1 & 2)
Barbara Lowrie (Year 3)
SOL RES
INQ SUP
FAC SUP
TTR
PRINCIPALS
Koehler
Lantzer
FAC SUP
COUNSELORS
Keller
Wilson
SUP CON TTR FAC RES
INQ RES TTR SUP
TTR FAC RES AD INQ SUP CON
TTR SOL RES CON INQ SUP
RES SUP
SUP TTR
EARLY USERS (Years 1 & 2)
LATER USERS (Year 3)
VISITS TO OTHER SCHOOLS
SOL
DK
SOL SUP
HOME
Spouses
Relatives
PEERS
SOL RES
OTHER OUTSIDE ASSISTERS
Michael Gaspari
John Paulingson
TTR SOL
Teacher Effectiveness Training
Unspecified:
Gifted.
Time Management
Career education
"Kids are People"

→ Received assistance

◆→ Received requested assistance

◄- - - -► Mutual assistance

TTR: Teaching, training
FAC: Facilitation or process-helping
SOL: Solution-giving
RES: Resource-aiding
CON: Controlling
AD: Advocating, representing client's interest
INQ: Inquiring, feeding back formatively
SUP: Supporting, reinforcing, encouraging

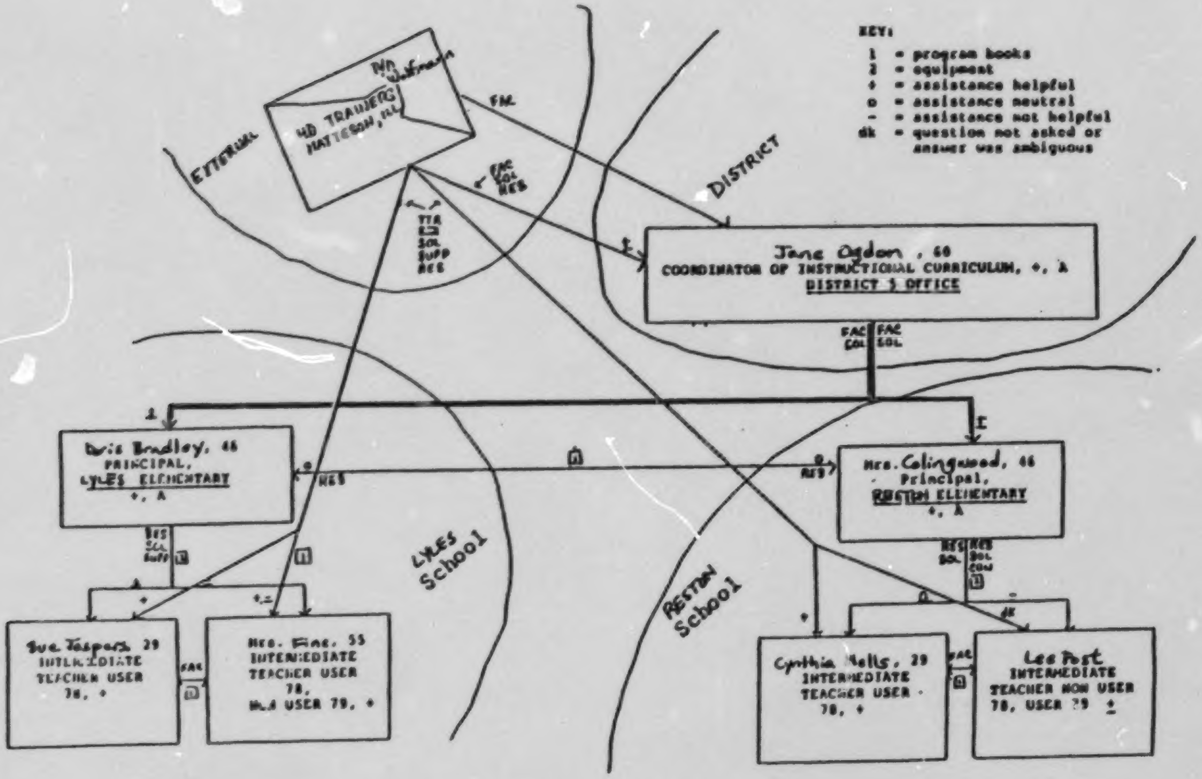
+
±
−
DK
Receiver's evaluation of assistance

List of materials:

1. Student Attitude and other instruments.
2. Guidelines for parent conferences.
3. Profile, plan form
4. IPA manual, various procedural sheets
5. IPA News
6. Learning style instrument & articles (Gaspari)

BEST COPY AVAILABLE

Fig. 4: Location and Orientation of Assistance During Planning and Implementation, Calston Site


EXTERNAL
ND Weltmann
ND TRAVERG
MATTESON, ILL
FAC
FAC
SOL
RES
TTR
SOL
SUPP
RES
DISTRICT
Jane Ogdon, 60
COORDINATOR OF INSTRUCTIONAL CURRICULUM, +, A
DISTRICT 5 OFFICE
FAC
SOL
FAC
SOL
Doris Bradley, 46
PRINCIPAL,
LYLES ELEMENTARY
+, A
RES
Mrs. Colingwood, 46
Principal,
RESTON ELEMENTARY
+, A
RES
SOL
SUPP
Sue Jaspers, 29
INTERMEDIATE
TEACHER USER
78, +
FAC
Mrs. Fine, 55
INTERMEDIATE
TEACHER USER
78,
USER 79, +
LYLES School
RESTON School
RES
SOL
RES
SOL
COM
Cynthia Wells, 29
INTERMEDIATE
TEACHER USER
78, +
FAC
Lee Post
INTERMEDIATE
TEACHER NON USER
78, USER 79 ±
dk
KEY:
1 = program books
2 = equipment
+ = assistance helpful
o = assistance neutral
- = assistance not helpful
dk = question not asked or answer was ambiguous

——▶ Received assistance

▶——▶ Received requested assistance

◀——▶ Mutual assistance

TTR: Teaching, training
FAC: Facilitation or process-helping
SOL: Solution-giving
RES: Resource-adding
COM: Controlling
AD: Advocating, representing client's interest
INQ: Inquiring, feeding back formatively
SUP: Supporting, reinforcing, encouraging

BEST COPY AVAILABLE

help not only to the steering committee and the coordinator, but also to the superintendent, principals, and early users of the program.

We can also see that the superintendent, principals and counselors offered help to users, mostly in the form of "support" and "facilitation", while the program steering committee and coordinators were more broad-ranging, bringing to bear as well "training, "resource-adding", "advocacy", "formative inquiry", "solution-giving" and direct "control".* Informal assistance also came from peers, and from users' home situations. Materials were an important assistance source, especially for later users.

In addition to Kenn Mueller, there were other outside sources of assistance, ranging from an external training conference attended by the Management Team to in-service training supplied by a charismatic lecturer (Michael Gaspari) on "learning styles", and several other consultants on issues from discipline to teacher effectiveness. There seemed to be moderate to high coordination of assistance through the medium of the Management Team, and the evaluator's work with it, and with the coordinator, administrators and counselors.

We should note, however, this excerpt from the site report:

> Though the Chart looks dense with helping relationships, it should be said that some users, and the third-year coordinator, believed that assistance to users was insufficient. And in most cases episodic and continuing assistance were not particularly salient, and mentioned only in response to questions by me. The exceptions were Mueller, who was extremely salient to Management Team members and the coordinators...and the charismatic Dr. Gaspari, who made a lasting impression on almost everyone I talked to.

---

*This chart only partially illustrates the fact that types of assistance given varied according to time: pre-implementation, and early and late during program operations. We return to the question of phasing of assistance efforts later. For a description of the meaning of each assistance type, see p. 157.

Despite this disclaimer, Carson did have considerably more assistance presence than many other sites (it ranked third among our 12 sites). At the Calston site, Figure 4 shows us that a considerably-more circumscribed reading program involved a more limited range of assistance roles and types. The developer/demonstrator (D/D) and trainers of the Matteson 4-D program supplied "solutions", "resources" (in the form of materials), front-end "training", and "support" to the central office coordinator who was the innovation's main advocate, and directly to users. The coordinator also aided the two principals, who in turn worked with teachers; the teachers' aid to each other was minimal. Materials were moderately important as an assistance source, but their delayed arrival slowed implementation seriously. There was one follow-up visit from the trainers. Generally speaking, the coordination among various sources of assistance was moderate to low. Even so, we should note (as Chart 17 shows us later) that the Calston assistance "presence" ranked approximately 7th across our 12 sites. The innovation, a focused, "drop-in" program, presumably required much less assistance than the district-wide, role-changing program being attempted in Carson.

Two more charts may be useful to show something of the consequences of varying amounts and types of assistance at our sites. Charts 15 and 16 review the specific, "uncategorized" ongoing assistance efforts we noted at the Masepa and Dun Hollow sites, reporting users' assessment of the usefulness of the assistance, and assessing their short-run and longer term effects.

At Masepa, the site which had more assistance presence than any other, the analyst noted:

> The site is rich and various in ongoing assistance; almost all informants attribute the growth and durability of the program to the multiplicity of aid received in the initial years of implementation.

Chart 15: Specific Types and Effects of Ongoing Assistance, at Masepa Site

Location	User's Assessment	Types Provided	Short-Run Effects (User's 'State')	Longer-Run Consequences	Researcher Explanations
Building Admin.	++ ++ - +	1. authorizes changes 2. eases schedules, assigns aides 3. controls fidelity 4. consults, offers solutions	1. relieves pressure encourages 2. helps early implementation 3. feeling policed 4. feeling backed-up, substantially helped	Users are helped administratively and substantively, feel obliged to do ECRI with minor adaptations	admin. authority, servicing, availability and flexibility lead to sustained, faithful implementation model
Central Office Admin.	+ ++	1. promotes ECRI 2. answers building admin., trainers' requests	1. pressures non-users 2. bldg.admins. have material, administrative support	program is perceived as supported, assisted, 'protected' by central office	central office able to push program and answer requests, yet not perceived as main actor by users
Helping Teacher	++ + ++ ++ ±	1. provides materials 2. demonstrates, models 3. answers requests 4. encourages 5. circulates, controls	1. reduces effort, increases repertoire 2. trains, facilitates use 3. problems solved rapidly 4. maintains level of effort 5. ambivalent: helped yet coerced	new, experienced users receive systematic instruction, follow-up, materials; stay with program and are careful about making changes in it	personalized in-service mechanism, with both training and assistance allows for mastery and spread of ECRI in 'faithful' format
User-Helping Teacher Meetings	++ + + +	1. comparing practices with others 2. debugging, complaining 3. learning about new parts 4. encouragement	1. encourages, regulates 2. cathartic, solves short-run problems 3. expands repertoire 4. gets through rough moments	creates reference group, gives users a voice, solves ongoing problems and lowers anxiety	multi-purpose forum which consolidates use and users, defuses opposition
Teacher-Users in Other Schools; Target School	+ + +	1. sharing materials 2. exchanging tips, solutions 3. comparing, encouraging	1. increases stock 2. new ideas, practices; problems solved 3. motivates, stimulates	increases commitment, regulates use (decreases deviance)	additional source of assistance, which increases as numbers of users grows
Trainers in Target School, Other School	++ ++ + +	1. tips for presentations 2. solution to short-term problems 3. encourages 4. serves as successful model	1. facilitates practice 2. helps expand beyond core format 3. maintains effort 4. stimulates	reliable, unthreatening backup provided in school	elaborate and effective lateral network; trainers seen as peers

Legend: ++ = very effective
+ = effective
± = mixed response
- = ineffective

BEST COPY AVAILABLE

Chart 15 documents the claim, reviewing in turn the vigorous presence of the building principal, the central office administration, the "helping teacher" (a specially-trained internal consultant), meetings of users, other teacher users, in other schools as well as the target school, and "turnkey trainers"——teachers who had been specially trained to teach the methods to their peers.

Short-run and longer-run effects, though diverse, form a coherent pattern; users are receiving a good working understanding of the ECRI program and support in carrying it out, know that the program has strong, sustained central office and principal backing, and develop strong commitment to the innovation.

In some contrast, Chart 16 displays the types of ongoing assistance and results achieved at Dun Hollow, which we ranked 10th of our 12 sites in assistance presence. Here an external developer was "using" (in both senses of the word) the local school district as a field-testing site for newly-prepared social studies materials on Alaskan Eskimos. Neither central office nor building administrators provided any ongoing assistance, which thrust teachers on their own. The developer's efforts, which included a series of brief "orientation" and "implementation" workshops, were seen as ineffective and wasteful. The materials themselves were seen as incomplete and often excessively demanding. The only reliable assistance occurred in the third year of implementation, when two teachers who were already teamed for other purposes helped each other plan, shared materials, and provided mutual support.

Over-all Assistance Presence

These examples provide some flavor of what the assistance picture looked like in a few of our sites, though they may have overly en-

Chart 16: Specific Types and Effects of Ongoing Assistance, at Dun Hollow Site

LOCATION	USERS' ASSESSMENT	TYPES PROVIDED	SHORT-RUN EFFECTS ("STATE" OF USERS)	LONGER-RUN CONSEQUENCES (ABLE/UNABLE TO DO)	RESEARCHER EXPLANATION
Central Admin'n	0	None	"We're alone"	Mastery on own	District norm
Bldg Admin'n	0	None	"We're alone"	Mastery on own	District norm
Developer	Ineffective (-) Ineffective (-) Ineffective (-) Ineffective (-)	Organized workshops Distributed units Visited once yearly Did revisions	"Waste of time" "Where are activities?" "So what?" "Same problems as last year"	No effect Developed own No effect Less time to curric. improvement	Poor developer-user relations made alliance unproductive
Teammate	Effective (+) Effective (+) Effective (+) Effective (+)	Helped with planning Gave ideas, sug'ns Shared materials Gave encouragement, ear for griping	How it could work Interesting input Saved some time, effort Not alone, making life easier	Improved each other's performance by sharing resources	Strengthened team work by calling upon all their resources
Materials (Units)	Mixed (±)	Course outline, content, teacher readings, activity sheets, slides	Some good stuff here, but omigod, the stuff that's missing!	Able to fill in the gaps, but probably not to own satisfaction	Too much resistance & anger for satisfaction to emerge

couraged the view that assistance was either full, dense and effective, or sparse and ineffective. Chart 17 may serve as a corrective. In it we see all 12 sites, sorted in order of assistance presence, including both "event-linked" and "ongoing" types.* The first six sites (p.146) were those where there was substantial assistance, both initially and in later stages (thought it naturally decreased as the innovation stabilized); the next three (p. 147) had modest initial assistance, but little or no follow-up or ongoing help. Finally, the last three sites had almost no real assistance except for brief start-up help.**

---

*"Event-linked" assistance referred to specific time-bounded situations like workshops, visits, meetings; "ongoing" assistance was supplied recurrently at many points in time by specific sources (administrators, peer users, materials, etc.). Naturally, event-linked and ongoing assistance were usually tied together in a characteristic pattern or configuration for the site.

**We place Dun Hollow in this category in spite of the existence of several "orientation" and "implementation" workshops, since they were regarded by users as almost wholly ineffective.

Chart 17: Sources, Amounts, and Recipients of Assistance

SITES/Scale of Assistance Substantial assistance	Event-Linked Assistance Sources								Ongoing Assistance Sources								Coordination among sources
	External conference	Pre-Start-up training	Follow-up session	Work-shop, in-service	Visit to other site	Committee meeting	Team or fac. mtg.	Evaluation	Mat'ls	Prog. Coord	Peer Users	Bldg. Admin	Home	Cent. Office	Extern. Indiv/Agency	Other	
MAS[illegible]DM)	2 (awareness) A,U	*1-3 wks A, turnkey, helping T. 4-5 days, U	D/D visit A,U	Occasional(1-2/yr), U			Wkly user mtgs↓ U Fac. mtgs.↓		Heavy→ U	-	Low↑ to high U	Mod.↑ U	Mod.→ parents, spouses children U	Heavy↓ A, hlpg. trainers		*Hlpg tchr Heavy→ U Tchrs in other schools: mod→,U *Turnkey trars;mod.→, U	*High(among cent. off., hlpg T; peers, bldg. admin, hlpg. T)
PLUMMET(IV-C)	3 (planning) A,P,U			Occasional,U		(Plans, proposals), A	Wkly P,U	Unspecified P,U	Heavy→ U	Heavy→ @#	Heavy→ U	#		Heavy↓ P, Mgt. Team	Heavy Courts, Tchr Corps)P	Advisory committee↓ P	Mod.(among prog. coord, peer users)
CARSON(IVC)	5 days (gen ed. issues) A	1-2 days, U		Regular (3-4/yr) U		*Wkly (steering grp.) A.P,U.	Occas. user mtgs. U	1-2 site visits/yr monthly data,P	Light to mod. P,U	*Heavy A,U	Heavy↓ U	Heavy U	Mod U	Heavy→ A,P	*Heavy→ (evaluator) A,P	Counselors Heavy↓U	Mod to high (steering grp; evaluator with admin., prog. coord. counselors)
TINDALE(IVC)		2 days U	Occas. U	2-3/mo ↓ U		Plan/dev. mtgs(4)AU Writing (summer) 6wks. A U	1-2/wk↓ (teams) U	*9/yr per user,↓ U	Mod.→ A,U	-	Mod.→ U	Heavy to light U		Mod.↓ A	Light↓ (cons. on rdng stats) A	*Peer rdng.consultants mod.↓ U	Mod. (among peer consultants, dept. chairs)
PERRY-PARKDALE (NDM)	1 (awareness) A,U	3-4 days P,U	D/D Start-up help P,U	Occas. (1-2/yr↓) P,U	1-day(pre-adopt)A 1 day D/D site,P,U		"Frequent"↓ P,U	Unspecified A,P	*Heavy P,U	Heavy@ U	*Heavy U		Mod. (1-2 U)P	Mod. P,U	Heavy (evaluations) A,P	8-10 wkly sessions/yr.1, yr. 2 ext cons,↓P,U	Mod. to low(among prog. coord., staff, admin)some in D/D
BANESTOWN(NDM)	1 (awareness) A	4 days P (incl. D/D site visit)		Rare (summer) U	*1 day, P,U	Planning meetings P,U Reading committee mthly P,U Crisis mtgs(2) A,P,U			Mod A,U P	*Heavy@ U	*Heavy U	Mod.to light P	Mod.→ (1U)	*Heavy↓ P		Debriefing mtgs Mod,P,U External course,Light(1U) Peer non-users, Light, U	High(among cent. off., prog. coord, users)

Receivers of assistance:

U = users U^E - secondary users
P = program coordinator
A = administrator

Changes in assistance over time:

↓decrease
→continuing at same level
↑increase

The innovation was a complete school, so the program coordinator was also the building administrator.
@Program coordinator is also a user.
- No program coordinator at site.

*Source of assistance seen as especially key, crucial.

Chart 17. cont'd: Sources, Amounts, and Recipients of Assistance

SITES/Scale of Assistance	Event-Linked Assistance Sources								Ongoing Assistance Sources								
Initial assistance, then minimal	External conference	Pre-Start-up training	Follow-up session	Workshop, in-service	Visit to other site	Committee meeting	Team or fac. mtg.	Evaluation	Mat'ls	Prog. Coord	Peer Users	Bldg. Admin	Home	Cont. Office	Extern. Indiv/ Agency	Other	Coordination among sources
CALSTON(MDM)	1 day (awareness) A	*Pre-mtgs + 2 days A,U	*↑ 1 day D/D visit A,U						Mod. U (delayed arrival)	-	Light to none U	Mod. to none U		*Heavy to none A, U?			Mod. to low (among cont. off., princ., user). Problems with D/D matl's delivery.
ASTORIA(MDM)		* 2 days U	Unspecified, U			Kdg.prog. search comm. A	Princ. mtg(1) A		Light U	-	Light U	*Heavy U		*Heavy to light A		Volunteer parents, other teachers, U Peer non-users (light) U	Low, temporary (cont. off., D/D, bldg. admin.)
LIDO(MDM)		* 3 days U	1 day D/D visit U			Park comm. U			Mod.↓ U	-	Mod.↓ U	Mod to none U		None to neg. A.U			None
Nearly none																	
DUN HOLLOW(IVC)		1 day orientation; start-up U	1?day U	3?-1 day sessions (later units) U				3 workshops U	Mod. to low,(incomplete) U	-	None to *mod. U				Light to none (developer)U		None
PROVILLE(IVC)		Brief, unspecified U					Princ. mts.(2) A voc.ed teacher mtg. U,X	Minimal A	Minimal U	Mod. to none. A,U,U^x		Light to neg. U		*Heavy to light P,A,U,Ux		Voc. ed.tchrs (U^x) neg. resistant	Low to none
BURTON (MDM)		3 days U							*Mod.→ U	-	Almost none U			Light U			None

Receivers of assistance:

U - users U^x - secondary users
P - program coordinator
A - administrator

Changes in assistance over time:

↓decrease
→continuing at same level
↑increase

- No program coordinator at site.

*Source of assistance seen as especially key, crucial.

Chart 17 may look formidable at first, but it is essentially a reference tool. We will mostly work from a boiled-down summary version of it, referring back to specific places in Chart 17 when it is useful. First we should make a quick scan of the chart as a whole---what we've sometimes called a "squint analysis." It's easy to see that there are substantial differences in assistance presence.

Sites high in the array are receiving assistance from a variety of sources, both through specific meetings and ongoing attention from people inside and outside the district; as we go down the array to p. 147 there are more and more empty spaces, and more and more examples of "moderate" and "light" assistance.

Sources and receivers of assistance. Table 10 is a summary drawn from Chart 17; it shows who received assistance from different sources without regard to intensity.

The Table is read as follows: (see top row, left side); in 3 substantial-assistance sites, users received assistance from "external conferences." In 1 site a program coordinator received assistance from this source; and in 5 of 6 high-assistance sites, administrators received assistance from external conferences. However, external conferences were not a "key source" in any of the high-assistance sites.

Among modest-to-minimal assistance sites, in only 1 site did administrators receive help from external conferences, and it was not "key."

It is clear that in high-assistance sites, both users and administrators receive assistance more frequently (in the categories of "external conference", "in-service meetings", "committee meetings", "materials", and "external individual/agency") than do those in low-assistance sites, where such assistance as occurs is directed more to users. Only for "central office" assistance do we note that more low sites get assistance than do highs --- and we can see

Table 10: Sources and Receivers of Assistance, in High- and Low-Assistance Sites

	In sites receiving substantial assistance (N=6)				In sites receiving modest to minimal assistance (N=6)			
	No. of sites who assisted:				No. of sites who assisted:			
EVENT-LINKED ASSISTANCE SOURCES	User	Prog Coord	Admin	* Key source	User	Prog Coord	Admin	* Key source
External conference	3	1	5	0			1	0
Pre-startup training	4	2	1	1	6		1	1
Follow-up session	3	1	1	0	4		1	1
In-service meetings	6	1	0	0	1			0
Visit to other site	2	2	1	1				0
Committee meetings	3	2	4	1	1		1	0
Team/faculty mtgs.	5	2		0	1		2	0
Evaluation meeting	2	3	1	1	1		1	0
ONGOING ASSISTANCE SOURCES								
Materials	6	2	2	1	6			1
Program coordinator	4		1	3	1		1	0
Peer users	6			4	5			1
Bldg administrator	3	1		1	4			1
Home	4	1		0				0
Central office	1	4	3	1	4	1	4	3
External indiv/agency		3	3	1	1			0
Other	5	3	0	3	2			0

* Number of sites where source was seen as "key or crucial, according to respondents.

from Table 17 that such assistance either starts heavy and dwindles to nothing (Calston, Proville, Astoria), was always light (Burton), or actually turned negative (Lido). Finally, we can see that, not coincidentally, four of the six high-assistance sites have a program coordinator — who not only gives, but frequently receives assistance (Table 10). The coordinator at Proville — a low assistance site—received almost no assistance, and gave little.

Event-linked assistance sources. Let us turn to the sources of event-linked assistance in more detail, with emphasis on those that differentiated high-assistance from low-assistance sites, and were "key" (asterisks on Chart 17).* We see that external conferences were present (though not "key) in five high-assistance sites: the intensive Keystone conference the Valley team attended, the Plummet planning sessions with local Court Services and Teacher Corps, and the awareness conferences offered by NDN D/D's for Masepa, Perry-Parkdale and

---

*We also drew on site reports to clarify the importance of particular assistance events. Note, however, that there are few asterisks given for event-linked assistance (Table 10), and we therefore treat our generalizations with some caution.

Banestown seem to have had both a cosmopolitanizing and supportive effect. In low-assistances sites, there is only Calston's one-day awareness conference.

In-service meetings also show differences between high- and low-assistance sites. Their frequency was generally not more than 2-4 meetings a year (even intensive Tindale's near-weekly sessions dropped off substantially after early implementation), and we see no asterisks in Chart 17. But the low-assistance sites typically have no in-service assistance at all.

Visits, another cosmopolitanizing strategy, though rare, appeared only in high-assistance sites: the Perry-Parkdale staff's early scouting of an ECBE site whose program they did not adopt affected their final adoption decision. When Banestown personnel saw their innovative program in operation in a neighboring community (and when Perry-Parkdale saw it operating at the D/D site), the response was to feel reassured and encouraged:

> I feel like we've done more in the month since they came back from Millville than we got done all last year. It was really important to see a lab set up, even if we don't have the space to do it like they have. (Teacher, Banestown)

Committee meetings were present at four high-assistance sites and two low-assistance ones. They appeared to perform, typically, a strong initial planning function (Plummet, Banestown, Tindale), along with a later steering function (the Management Team at Carson, the "crisis" meetings at Banestown), and sometimes continued program development (Carson, and the summer writing sessions at Tindale). The presence of committees demonstrated the district's serious commitment to the innovation as something that required energy and operating support mechanisms beyond those ordinarily available. By contrast, the kindergarten program-search committee at Astoria served only to legitimize adoption of the EPSF program, without helping ongoing users, and the Goodrich Park committee at Lido only monitored the use of the environmental teaching facility generally, without helping teachers with the sketchy implementation of the KARE program.

We note that team and faculty meetings, another indicator of serious commitment, were typical in high-assistance sites (5 of 6); in "low"sites we note, by referring to Chart 17, only a couple of principals' meetings, and one for Proville's vocational education teachers. But the weekly meetings of user teams and faculties that took place in Masepa, Plummet, Tindale and Perry-Parkdale appear to have been primary settings for support, encouragement, problem-solving, social regulation, coordination and learning:

> It keeps you on your toes...You find out what others are getting done and you're not and what you're doing wrong. (Teacher, Masepa)
>
> You go where you're safe and secure first, to gripe and complain (Teacher, Tindale).
>
> Now I can't imagine being on a staff without having really good friends. You know, it's all that affective stuff that's getting popular everywhere, but it counts. (Teacher, Plummet)
>
> It can't be learned except through experience--- you learn by doing. No one else knew enough about the program to help us. (Teacher, Perry-Parkdale).

We might note that the early intensive, shared work on planning and start-up even led the Perry-Parkdale staff to believe that they were implementing the ECBE program better than anyone else in the country--- the D/D included.

Event-linked assistance tied to evaluation meetings was present in several high-assistance sites. The recurrent IV-C reporting required in Carson and in Perry-Parkdale* aided in program clarification and systematization. More centrally, the main evaluator at Carson, Kenn Mueller, had also served as a basic program designer and continuing consultant; he developed a regularized system-check method that the Management Team used at all its meetings. At Tindale, "evaluation" had a different flavor, that of being monitored closely for faithful implementation by the department chairman, who said:

---

*Perry-Parkdale was using an NDN-brokered program, but also sought and received IV-C funds to aid in disseminating it through the state.

> I have the power of assignment, which means I can take away favored courses and make schedules difficult for them if they don't cooperate.

It is instructive to look at event-linked assistance which did not discriminate between high and low-assistance sites. Both sorts of sites had pre-start-up training, usually for at least three days. They also experienced brief follow-up sessions from the developer/demonstrator (all NDN sites except Burton, plus the Tindale IV-C planners). We note that the pre-start-up training was seen as especially key in Calston, Astoria, and Lido, where assistance largely dwindled thereafter. As we have already seen, these were sites attempting smaller-scale innovations, with (for two of the three) plenty of administrative latitude that allowed for simplification and required minimal user learning.

Ongoing assistance sources. Turning to the bottom half of Table 10, and to the right side of Chart 17, we can add some conclusions.

First, as we might expect from noting the presence of start-up training, brief follow-up, and sporadic in-service sessions, ongoing assistance tends to dwindle over time, though less so for high-assistance sites. A tabulation of the arrows shown in Chart 17 tells us that for high-assistance 50% of assistance sources (N=40) have a decreasing intensity of assistance delivered, 42% stay steady, and only

8% increase. For low-assistance sites, 75% of assistance sources (N=20) reduce, 20% stay steady, and only 5% increase.

When we look at specific rows of Table 10, the differentiation between high and low sites at first seems less strong for ongoing than for event-linked assistance. For example, both high and low-assistance sites mention materials ar an assistance source. But (chart 17) materials presence is called "heavy" in Masepa, Plummet, and Perry-Parkdale, and in none of the low-assistance sites. So we can infer a real difference.

Help from peer users is also mentioned in high and low alike; but here too note that it is key or crucial in 4 high sites and in only one low site; Chart 17 also shows us that peer user assistance was absent to moderate in low-assistance sites, and moderate to heavy in all the high-assistance sites. So we can believe quotes like these from high sites:

> The teachers ask each other a lot..They don't come to me; they go to their next door neighbor and ask, "Is this working for you?" Or, "I've got this problem." (Principal, Masepa)
>
> I have her, and she has me. (Teacher, Masepa)
>
> Guess we were helping each other. I was helping Jessica when we were deciding what to do. When we came to a test and didn't have any materials, we were helping each other decide where to go to get what. (Teacher, Banestown).

and ones like these from low sites:

> I don't offer help to Queen teachers because they've been teaching longer than I have. On the seniority scale, I'm on the bottom with only 10 years. At Taylor, the teachers are younger and are more likely to ask for help, but as a group we're all self-confident and we work on our own.

In both sorts of sites it seems clear that peer user help is normatively regulated; there are shared ideas as to the appropriateness or inappropriateness of colleague support. Prior work has stressed the importance of such norms (Miles, 1972 ; Runkel et al., 1980) in school change efforts more generally; here we see direct effects on initial assistance.

There also appear to be differences between high and low assistance sites in regard to assistance received from home. Moderate help from spouses and others (including children, and one's own parent) is mentioned in four "high" sites and in no "low" sites. Three of the four sites (Banestown excepted) were working with especially demanding innovations, so we were not surprised to find spill-over to non-work settings.

Ongoing assistance from external individuals or agencies is also more frequent in high-assistance sites. Cases in point are the "security blanket" offered the Carson schools by evaluator-cum-consultant, Kenn Mueller; the less-strong but still salient role of evaluators and consultants at Perry-Parkdale; and the strong initial assistance provided in envisioning and designing the Plummet program by the city court system and Teachers Corps. Tindale used consulting help lightly in the design of its reading program and its evaluation. By contrast, at Dun Hollow the developer sited in the nearby intermediate unit gave assistance that teachers felt was infrequent, and ineffective.

In the "other" category, note that in two high-assistance sites there were key ongoing assistance efforts by internal consultants: the helping teacher and turnkey trainers at Masepa, and the peer reading consultants at Tindale. No such roles appeared in low-assistance sites.

Note, too that program coordinators, who tended to combine line and staff functions, were seen as key assisters in three of the four high-assistance sites where they were present. By contrast, Proville's successive coordinators supplied moderate help at first, then pulled back radically as other job pressures intervened.

Finally, we should look at the role of line managers. The assistance provided by building administrators does not show a contrast between high- and low-assistance sites. Though the two principals at Carson, and the Plummet program director, gave quite vigorous energy to supporting users, there was decreasing principal involvement at Tindale and at Banestown over time, and none at all in Perry-Parkdale, where the principals were distant and variable in their attitudes to the EBCE program. Turning to low-assistance sites, we can note the key role played by the Astoria vice-principal in ensuring implementation of the mandated EPSF program, along with the early moderate involvement of Calston's principals in blessing and supporting the new 4D reading program, and the Lido principal's championing of the KARE environmental education program. Perhaps, though, we might conclude that real absence of principal help (or negativism, as in Proville) is more likely in low-assistance sites. Note, for example, the hands-off attitude of the Dun Hollow and Burton principals. Perhaps the only reason why the Perry-Parkdale program succeeded in spite of principal indifference or opposition is that it was essentially isolated and free-standing, a sort of non-threatening adjunct to the ordinary high school program which principals could tolerate, if not encourage.

The role of central office administrators is, in a word, central. As we have already seen, central office pressure was a strong factor in adoption of many of the programs we were studying. Here we note that central office involvement in assistance is initially heavy to moderate in all high-assistance sites, and stays at least moderate in all sites except Tindale. It is initially heavy in three of the low-assistance sites, but absent to light in the other three (Lido, Dun Hollow, Burton). In Calston and Astoria, central office initiation was a core reason for adoption; once implementation was under way, and other administrators were picking up the assistance slack, central office input dwindled. In Proville, the slack was never picked up when the superintendent lost power ("They would do what he said when he said it, but it was a different story behind his back.") and the central office turned its attention elsewhere. So we can conclude that high-assistance sites had a non-trivial amount of continuing implementation assistance from the central office.

Generally speaking then, the picture is that high-assistance sites report more frequent, more sustained ongoing help from nearly all sources in Table 10 and Chart 17: materials, peers, external individuals/ agencies, program coordinators, internal consultants, people at home, central office administrators. Only the picture for building administrators is less clear; high-assistance sites do not always have a high principal presence, though it appears that opposition or lack of principal support is more frequent in low-assistance sites.

These findings also suggest that ongoing assistance is more crucial—or at least more consistent—than event-linked assistance.

Types of Assistance, Over Time

So far we have been looking at sheer *amounts* of assistance. But what *sorts* of assistance were supplied to people in our sites, and did different sorts materialize at different points in the school improvement process?

We developed a set of categories for what we called assistance "orientation" - what the assister, in general, seemed to be doing. Our codes were as follows:

CON Control: the assister is exerting pressure aimed at making the receiver do something.
TTR Teaching/Training: the assister is explicitly transmitting information, developing receiver skill, etc.,usually in a structured way.
SOL Solution-Giving: the assister is giving the receiver "answers", advice, solutions to problems.
RES Resource-Adding: the assister is providing materials, money, time, or other resources needed by the receiver.
ADV Advocacy: the assister is actively representing the interest of the receiver to some other audience (such as administrators or funders).
FAC Facilitation: the assister is aiding the receiver to achieve goals, giving at-the-elbow assistance with the processes being used.
INQ Inquiring: the assister is collecting data from the receiver, or implementation situation more generally, and feeding it back in a "formative evaluation" mode to aid next steps.
SUP Support: the assister is providing encouragement, reinforcement, or emotional support to the receiver.

These codes draw on prior work on the role of "linking agents" (Nash & Culbertson, 1977) and consultants (Blake & Mouton, 1976). We have arranged them above along a general continuum that runs from more "directive" types of behavior to more "non-directive" ones. This continuum has been suggested by prior researchers on consultation (ex: Lippitt & Lippitt, 1978; Schmidt & Johnston, 1977), and seems useful in our study, if only to highlight the degree to which assistance is, broadly speaking, user-centered as vs. assister (or innovation-) centered.*

Site-level examples, and our coding methods. The data being drawn on in this section were originally organized as in Charts 18 and 19, which show the types of assistance offered over time in the Masepa and Dun Hollow sites; they can usefully be compared with Charts 15 and 16, which supply detail on concrete assistance behaviors. For example, in Masepa (Charts 15, 18) we can see that the principal's behavior of "eases schedules, assigns aides" corresponds to the RES code during early implementation. The general picture for Masepa that we see in Chart 18 is one of moderate to heavy assistance, coming from many different sources; types of assistance do not seem to vary much between first and later implementation. On the other hand, looking at Dun Hollow (Chart 19), we can see that the range of assistance types offered is much narrower, and that none at all comes from line administrators. We can also note few shifts in type of assistance from the developer over time (light TTR, moderate RES); we recall that she was essentially bringing in materials on the Eskimo curriculum for "field testing". And we can see a decisive assistance shift in the third year of implementation: the teachers doing the field testing supported each other strongly (SUP), revised the materials (SOL), added some of their own (RES), and aided each other's work (FAC). But all of this seems to have occurred out of sheer desperation

---

*The ordering above is conceptually plausible, and can help us see general themes in our data. In any particular site, the degree of "directiveness" attached to any particular type of assistance did, of course, vary. For example, the "support" offered in a number of sites was not wholly "user-centered", but contained strong elements of persuasion and selling (vide, for example, Supt. Tynes' role in Proville.)

Chart 18: Source, Frequency, and Orientation of Assistance, Masepa Site

			Early Implementation 1977-78	Later Implementation 1978-80
Ongoing Assistance	Building Admin.		Moderate: SOL, RES	Heavy: SOL, RES, CON, SUPP, AD
	Central Office Admin.		Heavy: RES, SOL, SUPP	Moderate-Low: RES, CON
	Helping Teacher		Heavy: RES, SOL, TTR, SUPP, AD, INQ, ▭	Heavy: RES, TTR, SOL, SUPP, CON, AD, INQ, ▭
	Teachers in Other Schools		Moderate: ▭, SOL, SUPP	Moderate: ▭ , SOL, SUPP
	Peers - Other Teachers in School		Low: SOL	High: SOL, ▭ , SUPP, INQ
	Trainers, First User		Moderate: AD, SOL, ▭ , SUPP	Moderate: AD, SOL, SUPP, ▭
Event-Specific Assistance	Pre-Service Training		Low: TTR (4-5 days)	Low: TTR (4-5 days)
	Periodic Meetings		High: TTR, SOL, SUPP, AD, INQ (1 per week)	Moderate: TTR, SOL, SUPP, AD, INQ, CON (1 per month)
	In-service Training	Users	Low: TTR (2 per year)	Low: TTR (1-2 per year)
		Trainers	Low: TTR (1 intensive)	Moderate: TTR (Did surveillance, 1 intensive)

LEGEND: Orientation

TTR=Teaching, training
FAC=Facilitating, process-helping
SOL-Solution-giving
RES=Resource-adding
CON=Controlling

SUPP=Supporting, encouraging
AD=Advocating clients' interests
INQ=Inquiring, feeding back, formatively

▭ =ECRI materials

Chart 19: Source, Frequency, and Orientation of Ongoing Assistance, Dun Hollow Site

	TRAINING Fall 1977	FIRST IMPLEMENTATION Winter/Spring 78	SECOND IMPLEMENTATION 1978-79	THIRD IMPLEMENTATION 1979-80
CENTRAL ADMIN'N	None	None	None	None
BUILDING ADMIN'N	None	None	None	None
DEVELOPER	Light TTR	Light TTR Mod RES	Light TTR Mod RES	Light TTR Mod RES
PEER USERS	None	None	None	Mod FAC Heavy SUPP Mod SOL Heavy RES
MATERIALS (UNITS)	None	Mod RES	Mod RES	Mod RES

Mod = Moderate

TTR = Teaching, training
FAC = Facilitating, process-helping
SOL = Solution giving
RES = Resource adding
SUPP = Supporting, encouraging

---

when no other assistance was forthcoming.

To understand such data across all 12 sites, we examined the site-level charts, and assembled their data into an overall chart, which appears as Chart 20. Since the site-level charts are obviously bristling with complexity, we owe the reader a careful account of our "decision rules" for data reduction and categorization. In brief, given our interest in the ebb and flow of different assistance types over time:

1. The aim was to get a single estimate of the maximum strength of assistance of each type, regardless of its sources or number of different sources providing it.

2. If assistance sources varied in strength, more weight was given to the source closer to the user (for example, building principal, peer users, materials, etc.).

3. If close-to-user sources varied in their strengths, the "tilt was toward the "heavy" side (ex: in Masepa, where the building administrator gave moderate RES assistance, and the helping teacher gave heavy RES assistance, "heavy" RES was coded).

Chart 20 Frequency and Orientation of Assistance, by Phase

SITES/Scale of Assistance	Planning/Development/Adoption	Final Planning/Pre-Training	First Year of Implementation	Later Implementation
	CON TTR SOL RES ADV FAC INQ SUP	CON TTR SOL RES ADV FAC INQ SUP	CON TTR SOL RES ADV FAC INQ SUP	CON TTR SOL RES ADV FAC INQ SUP
Substantial assistance				
Masepa (NDN)	(MD)	(TTR included at right)	TTR SOL RES ADV INQ SUP	CON→ TTR→ SOL→ RES→ ADV→ INQ→ SUP→
Plummet (IV-C)	SOL RES ADV SUP	CON SOL RES ADV FAC INQ SUP	CON SOL RES ADV FAC INQ SUP	CON→ SOL↓ RES↓ ADV↓ FAC↓ INQ→ SUP↓
Carson (IV-C)	CON SOL RES SUP	CON TTR SOL RES FAC SUP	CON TTR SOL RES FAC INQ SUP	CON↓ TTR→ SOL→ RES↑ ADV↑ FAC→ INQ→ SUP→
Tindale (IV-C)	CON SOL RES	TTR SOL RES	CON TTR SOL RES FAC SUP	CON↓ SOL→ RES→ FAC↓ SUP↓
Perry-Parkdale (NDN)	SOL RES FAC SUP	TTR SOL RES FAC SUP	CON TTR SOL RES ADV FAC SUP	CON→ TTR→ SOL→ RES↑ ADV↑ FAC↓ INQ→ SUP→
Banestown (NDN)	(included at right)	CON TTR SOL RES FAC INQ SUP	TTR SOL RES FAC INQ SUP	CON TTR SOL RES FAC INQ SUP
Initial assistance, then minimal				
Lido (NDN)	(included at right)	TTR SOL RES ADV FAC SUP	SOL RES ADV FAC SUP	RES→ ADV↓ FAC→ SUP↓
Astoria (NDN)	CON SOL RES FAC	(included at right)	CON TTR SOL RES FAC SUP	(N/A)
Calston (NDN)	(included at right)	TTR SOL RES FAC SUP	CON SOL RES FAC SUP	
Nearly none				
Dun Hollow (IV-C)	N/A	TTR	TTR RES	TTR→ SOL* RES↑ FAC* SUP*
Proville (IV-C)	CON SOL ADV SUP	SOL RES FAC SUP	CON SOL RES FAC SUP	SOL↓ RES↓ FAC→
Burton (NDN)	(included at right)	TTR RES SUP	SOL RES SUP	(N/A)

Legend for frequency of assistance:

CON = Heavy
CON = Moderate
CON = Light
= Absent

(MD) = missing data
N/A = not applicable

* appeared only in second year

For sites with 2 or more later-implementation years:

↑ = increased
→ = maintained
↓ = decreased

We thus maximized the likelihood that we could "see" a particular type of assistance, _if_ it were present at any particular phase. Chart 20 is not very useful as a measure of over-all assistance _presence_ or intensity, because one instance of "heavy" RES counts just as much as "heavy" RES supplied from five different sources. Even so, as we can see, Chart 20 does discriminate the 12 sites in almost exactly the same way as did Chart 15 on assistance presence.

How assistance looked in different phases. An overall look at Chart 20 shows us that our six high-assistance sites are not just doing "more" assistance than low-assistance sites, but more _diverse_ assistance. Typically, seven of our eight types of assistance are present, especially during implementation, but even during final planning and pre-training. The picture, in effect, is one of full-fledged follow-up or "back end" assistance, in some contrast with the initial or "front-end" assistance and weak follow-up help we can see in the low-assistance sites.

Let us proceed phase by phase. In the _planning/development/adoption_ phase, we can see that the typical project seems to involve Control, Solution-Giving, and Resource-Adding, regardless of whether it will turn out later to be a high-or low-assistance site. Support, however, does seem more visible during this early phase in high-assistance sites. We can also note that assistance behaviors which are more "directive" (toward the left side of the continuum) are more typical than those toward the right, where we might infer that the Support being given is a "pushing", "blessing", "entrepreneurial" support rather than a user-centered, socio-emotional type.

Site reports tend to confirm this; in Carson there was active mutual support among the superintendent, principals and consultant as they pursued their intense planning; in Plummet, both the superintendent and the city court system were convinced of the need for a transition facility for delinquent youth and pushed the idea hard. In the Perry-Parkdale central office both the charismatic Henry Jenkins and the more phlegmatic Dick O'Hara made the case for the needed new work-experience program. And in what turned out to be, later on, a low-assistance site, the Proville work-experience program was initially pushed hard and lengthily by superintendent Tynes. Perhaps it is no coincidence that three of the four sites with strong early support were IV-C. And the Perry-Parkdale NDN innovation was a substantial one that turned out to involve IV-C funds as well.*

In the final planning/pre-training phase, as might be expected, we begin to see more user-centered assistance behaviors (toward the right) and the differences between high and low-assistance sites begin to sharpen. Though both kinds of sites offer Training, the high-assistance sites are doing it more intensely. Solution-Giving is stronger in high assistance sites; so are Resource-Adding and Support. Facilitation is a bit stronger, too. But we also note some differences in kind: we note Control in three high-assistance sites, and Inquiry in two, though neither appears in any low-assistance sites. It is as if these high-assistance sites are "getting ready" for the controlling and inquiring that will turn out to be needed later on.

During the first year of implementation, the high-assistance sites do not seem to differ from low-assistance ones very much as far as Resource-Adding is concerned; and we can also see that the assistance behaviors of Control, Facilitation and Training are present in almost all projects (two of the bottom three excepted). But it's clear that Solution-Giving is more intense in the high sites; and that strong Support is present in all of them, while being light or absent in 5 of the 6 low sites. We also see that Advocacy and Inquiry are present in several high sites and in no low ones. Even in the first year of implementation, high-assistance sites are giving attention to user issues: advocating their interests to key decision-makers, collecting steering data on the progress of implementation and feeding it back, and providing strong support.

---

* We should also note that three of the four sites with Control during early planning were IV-C. Perhaps locally-developed projects require both more direct influence and pushing/blessing in the planning phase.

In the years of later implementation, the differences are even more striking. The six high-assistance sites show a sustained pattern of comprehensive aid. The existing level of Control (whether light, moderate or heavy) continues, whereas it is clearly absent in low sites. Training continues to be available; so does Solution-Giving. Facilitation and Support also continue,decreasing slightly, but not to "light" levels. And we note that Advocacy levels continue or increase, and that high to moderate levels of Inquiry are maintained. The general picture is one of self-sustaining, user-oriented assistance processes.

The picture in low-assistance sites is quite different. No Control is exerted; there are no examples of Inquiry. Training and Advocacy occur in only one site each. The working assumption seems to be that little or no continued assistance is required. In some sites, this assumption was undoubtedly warranted. In Calston, the users had mastered the innovation, and the city-wide fiscal crisis made further diffusion of the innovation unworkable. In Astoria, the arrangements for what promised to be a workable second-year implementation were well in place. In Burton, the first year's selective, adaptive use was supposedly a warm-up for later adoption. But in Lido, discouraged users, bitter at lack of support, were thinking about leaving; the Dun Hollow users, exhausted from having to develop materials and teaching practices themselves in the face of ineffective developer assistance, came out against the experimental social studies units.

In Proville, the combination of near-invisible assistance and resentment from teachers and principals killed the innovation.

Chart 20 leads us to the speculation that diverse, self-sustaining, intense assistance, especially late in the implementation process, may be essential for full-scale, stabilized use of innovations. Also, such assistance seems to reflect, above all, the presence of administrative commitment, as well as the existence of innovation requirements that demand something of users. We will look at the evidence for these speculations shortly. First, however, we should turn to the evidence on what assistance accomplishes locally.

The Specific Effects of Assistance

What did these various assistance efforts do for those who received them--or more generally, for the progress of implementation in the school setting? We have already shown examples of the basic site-level displays we used to sort out the welter of specific assistance episodes, and their short and long-term consequences (see Charts 15 and 16).

Chart 21 summarizes these data, with our 12 sites arrayed as before by total assistance provided. The effects are classified in three broad domains: effects on the innovation and its use, effects on individuals, and effects on the school as an organization. (We shall return shortly to this three-way distinction as we examine the "transformations" that took place in all three during implementation.) The O's and E's in Chart 21 signify effects seen from ongoing and event-linked assistance; the 1's and 2's show whether those effects were seen as short-term or long-run. The rows labeled "user assessment" give average user judgments of the assistance at the time it was delivered.

Chart 21: Effects of Ongoing and Event—Linked Assistance, By Sites

EFFECTS OF ASSISTANCE	Substantial assistance provided						Initial assistance, then minimal			Nearly no assistance		
On the innovation and its use	Menops	Plummet	Carson	Tindale	Perry-Parkdale	Banestown	Lido	Astoria	Caiston	Dun Hollow	Proville	Burton
Planning, developing		02 E2	012	012 E2	01	E1	012	01		01	02	
Validating, confirming			012	01 E1	E12			E2				
Sense of goals, direction, priority		012-E1 2-	02	01 E2		02					01	
Increasing legitimacy of innov		E12				E2			E1			
Obtaining funds			01		01 E2						02 E12	
Aiding start-up, launching	01	012	02		E1	01 E1			02		02	
Preparing/adding materials		02	02	E1		012	02	01	012-	01-2		
Providing general frame/model				01		E12	01					
Aiding good-quality implementation		02	02-E1				02	01- E2	02	01-2	02-	
Maintaining program	012		02	02		E2						
Program regulating, managing	012		012			012						
Protecting, saving program		012			01-	E12	02					
Program adaptation, alteration	012	E2	02-E2-	E2-	E2	E1	02	012		E1-2-		01
Program strengthening		E2				02						
Program expansion	01					E2	02				012	
Program continuation (district)		02		E2				E2				
Program evaluation			01	02	012 E2							
Program dissemination			E2			012						
USER ASSESSMENT	↔/+	↔/+	+ to/± ±	+/±	+ to/+ ±	+/+ to ↔	+ to/+ ↔	+ to 0 to ↔/+	0 to/+ −	±/±	+ to/+ to ±/−	+/+
On individuals												
Reducing anxiety, reassuring	02		012E12	01 E2	01 E12	E1			02 E2			01
Reducing ambiguity, uncertainty			01-E1						E2	01-		
Increasing understanding, coherence, concepts			012E2	012 E1	012 E12	E1	01	01		E1-	E1 2	
Reducing resistance			02-E2-	E2-		01			E2		01- E1-2-	02
Reducing frustration, resentment		01- E2-		E1-	01			E2-		E1-2-	E1-2-	
Increasing optimism, hopefulness		E1										
Stimulating, motivating	01		E1							01		
Catharsis, blowing off steam				01								
Increasing interest, ownership	012	E2	012E2	E2	01 E2	012E2		012 E12	E2	01- E1	01-	012
Feeling supported, encouraged, backed	012	01,2-	01		012	012	01	01	01	E1	01-	
Feeling pressured, policed	01			012 E1						02		
Increasing autonomy		02	02	012-	02							
Mobilizing energy			02 E1			01				E2		
Saving energy, reduction of tasks	01			012				012	02	01		
Enlarging repertoire	01	E2	01 E1-		E2	01						01
Solving short-run problems	012		01	01 E12		012E12			E12	01-		
Increasing satisfaction, enjoyment			01 E2							01- E1-		
Teaching/refining skills	01		02			01				02		
Routinization			01	02 E2	E2							
Increasing competence, mastery, confidence			012 E1	02 E2	02 E12		01		02	02		02
Continuation (indiv. level)						02						
USER ASSESSMENT	↔/+	±/+	+ to/+ to ± ±	+/± to −	+ to + to ↔/↔	+ to/+ ↔	+ to/+ ↔	+ to/± to ↔ −	+ to/+ ±	+ to/± to − −	± to/± to − −	0 to/+ +
On the organization												
Conflict resolution		01	02								01	
Reducing isolation, aiding linkage			E2	01 E2		01	01			01-		
Increasing cohesiveness, trust	02	01 E2	E12	02+ E12	01			E2				
Increasing collaboration		02		E2	02							
More innovative climate		02										
Improved problem-solving		E1			E2							
Increasing morale			01									
Establishing implementation "team"			012-E2	E2		E12		01				
Building assistance infra-structure			012 E12		E2	E12						
Coordination, improved organization		01		E1		02						
Lower dependency on assisters			012-									
Built links to external environment		012 E1,2	01									
USER ASSESSMENT	↔/+	↔/+	+ to/+ ±	+/+ to ±	+ to/+ ±	+ to/↔ ↔	+/+	+/+	NA/NA	+ to/NA 0	±/NA	NA/+

0 = ongoing assistance
E - event-linked assistance effect

- = effect was negative, or opposite

1= short-run assistance effect
2= long-run assistance consequences

* effects of event-linked assistance not assessed
NA = not applicable

User Assessment

↔ very effective
+ effective
0 neutral
± mixed
− ineffective

BEST COPY AVAILABLE

The categories of effects at the left of the chart were inductively derived from the site reports. Reading down them should serve to dispel the idea that assistance effects are narrow or unimportant. All sites have effects from assistance on the innovation's progress from planning to final dissemination; all sites show effects (even more numerous) on individuals, from reassurance to increased mastery and personal continuation of the practice. All sites but 2 show effects on the organization from conflict resolution to environmental linkage, though they are the least frequent type of effect. And a general scan across the chart confirms our earlier analysis: there are many more diverse effects at high-assistance than at low-assistance sites.

We can also see something else. The effects on the innovation and on individuals are deliberately arrayed in rough order from early to late in the implementation process. Scanning the chart, it's apparent that low-assistance sites are much less likely to show assistance effects occurring late (such as "program continuation" or "routinization").

Table 11, which is a summary of Chart 21, enables us to substantiate these first impressions. The numbers show the total of effects across sites, in each category.

Table 11: Summary of short and long-term effects* of assistance, by assistance domain

	For high-assistance sites (N=6)				For low-assistance sites (N=6)			
	Ongoing		Event-linked		Ongoing		Event-linked	
EFFECTS ON...	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
The innovation and its use	25 -	24 - - -	12	20 - -	11 -	16 - -	3 -	5 -
Individuals	39 - -	28 - - - -	17 - -	22 - - -	19 - - - - -	10 -	10 - - - - -	12 - - - -
The organization	12	11 - -	9	13	4 -	0	0	0

- = negative or undesired effect (included in numerical totals)

* Cell totals are a simple count of effects (O1,O2,E1,E2), summed across all sites.

We can see in Table 11 the numbers that document the generalizations just made. We can also see that negative outcomes of assistance efforts on individuals —what might be called "backfiring", along with simply ineffectual efforts—are more present at low-assistance than at high-assistance sites, amounting to a third or so of all effects noted. For example, for short-run effects of ongoing assistance on individuals in low-assistance sites, there are 7 instances of negative effects out of the total of 19. A look back at Chart 21 shows that most of these negative effects occurred at Dun Hollow (where users got more and more disenchanted with the developer's non-responsiveness and lackadaisical help for the demanding social studies units they were field testing for her), and at Proville (where principals and vocational education teachers felt increasingly resentful of the pressure applied by the central office coordinator).

We also see that negative effects in the innovation-specific domain are just about as likely, proportionately speaking, in high- or low-assistance sites. Comparisons for the organization-effects domain are difficult, since the base rate of organization effects is almost nil for low-assistance sites, where, as we have already noted, large-scale—thus potentially organization-changing—innovations were usually not being attempted

The rows of Chart 21 on "user assessment" only show differences at the extremes. Although the very-high assistance sites (Masepa, Plummet) are more likely to have ++ signs, and our very low sites 0, ± and - ones, there is a considerable spread otherwise. We also note that the bulk of assistance provided is judged positively.* So users' feelings at the time about whether the assistance was effective or a mixed bag, are not a very reliable guide to the positive effects, either short or long-run, that can be noted by an analyst. However, clearly negative assessments can probably be trusted. For example, the negative assessment of the Dun Hollow developer's performance, and of the Proville coordinator's pressuring tactics, fit with the absence of positive outcomes. In Dun Hollow, the only positive assistance occurred among users; in Proville early orientation meetings provided partial understanding, but made no difference in the face of continuing resentment, resistance, and lack of support felt by primary and secondary users.

---

*A detailed tabulation, not shown here, supports these impressions.

The content of effects. Turning back to Chart 21 for a minute, what can we see about specific effects? Those which occurred in at least 4 of 6 sites in the *innovation* domain were:

High-assistance sites	Low-assistance sites
Planning, developing	Planning, developing
Goals, direction, priority	
Aiding start-up	
Preparing/adding materials	
	Aiding good-quality implementation
Program adaptation	
Maintaining program	

The general picture of frequent effects in high-assistance sites suggests thorough-going start-up planning and support, followed by assistance that aids adaptation and maintenance. Low-assistance sites also show effects on planning, but on little else; the "quality-aiding" finding is only true for the sites (Lido, Astoria, Calston) with a small-scale innovation requiring little follow-up.

For the effects on *individuals*, we note, in at least 4 of 6 sites:

High-assistance sites	Low-assistance sites
Reducing anxiety	
Increasing understanding	Increasing understanding
Increasing ownership	Increasing ownership
Feeling supported	
Enlarging repertoire	
Solving problems	
	Increasing competence, confidence

The recurring emphasis across sites on understanding and ownership is consistent with Fullan's (1982) view that problems of meaning are the central issues as users approach an innovation. For high-assistance sites, the effects noted also involve anxiety reduction/reassurance, strong support, and repertoire enlargement accompanied by problem-solving. The latter two are consistent with our earlier finding that sustained assistance is more typical in high-assistance sites.

Finally, we note in Chart 21 that the most frequent type of organizational effect, occurring in 5 of the 6 high-assistance sites, is increasing cohesiveness/trust. We should also note a pattern of effects in high-assistance sites (3 sites each) that adds up to building a more-interdependent, more tightly-coupled set of structures: reducing isolation, building an implementation "team", building assistance infrastructure, coordination, improved collaboration. The message here is that sustained high assistance moves its client systems away from "loose coupling", strengthening their capacities beyond those needed simply to implement the innovation. Organizational effects in low-assistance sites were rare and scattered.

Short-run and long-term effects. Table 11 shows us two things, at least. Long-term effects are at least as frequently mentioned as short-term effects and are usually more-frequently mentioned when we are talking about innovation-specific and organization-changing effects. But for ongoing assistance to individuals, the reverse is true. It is as if immediate impacts on persons are easily discernable, but their long-term consequences more ambiguous, whereas long-term effects are more visible at the more general (innovation or organization)level. This is perhaps natural in that many of the individual effects are on immediate attitudes and feelings (anxiety, resistance, ownership, feeling supported); if there are a minimum of "backfires", and sustained assistance occurs, we would expect such assistance effects to be less needed, and assistance can concentrate on issues of the innovation and the organization.

The Antecedents and Consequences of Assistance

What seems to have induced the varying levels of assistance we have noted? And can we discern in a preliminary way what the general consequences seem to have been? Chart 22 arrays our 12 sites in the usual way, by assistance presence, and identifies several possible "causal" factors. It also shows two general consequences of assistance: smoothness/roughness of early implementation, and "stabilization of use", a variable we shall be discussing more fully in the next section.

We expected that innovations of a larger size/scope, requiring more change in users' practice, and which were a poor "fit" to the present classroom and organizational set-up would be more likely to evoke a larger assistance presence.*

We compute a weighted index of the three in the fourth column of Chart 22. Scanning the four columns, and comparing them with the column marked "OVERALL ASSISTANCE PRESENCE" shows that these indicators of implementation requirements do indeed predict the amount of assistance offered. More specifically, it appears that the real issues are size/scope, and required practice change. The degree of classroom and organizational fit is not so critical: note that Masepa's good fit and Carson's moderately-good fit coexisted with high assistance presence; and conversely, that Calston's and Dun Hollow's Poor fit went with low assistance presence.

We also thought that scale of funding, central office commitment to change, and administrative latitude might be relevant to how much assistance was

---

*These variables, which appear in the first 3 columns of Chart 22, are discussed and explained more fully in our section on change in the innovation, pp.215 ff. Some have already been discussed in the section on early implementation.

Chart 22: Antecedents and Consequences of Assistance

SITES/Scale of Assistance	ANTECEDENT CONDITIONS							ASSISTANCE	CONSEQUENCES	
	Actual size/scope of innov.	Required practice change	Actual Classroom/ organizational fit	Implementation requirements #	Scale of funding	Central office commitment to change	Admin latitude	OVER-ALL PRESENCE	Smoothness/ Roughness of early implementation	Practice-stabilization (later implementation)
Substantial assistance										
Masepa (NDN)	large	major	mod/good	12	$30-50K	high	low	HIGH	very rough	mod
Plummet (IV-C)	large	mod/major	good/poor*	12	$300K	high	high	HIGH	very rough	mod
Carson (IV-C)	large	major	mod/good	12	$96K	high	mod	MOD/HIGH	rough	mod
Tindale (IV-C)	large/mod	major	mod	12	$87K	high	low	MOD/HIGH	rough	high
Perry-Parkdale (NDN)	mod	mod/major	mod	10	$300K@	mod	high	MOD/HIGH	mixed	mod/high
Banestown (NDN)	small/mod	major	mod	10	$5.6K	high	high	MOD	very rough	mod
Initial assistance, then minimal										
Lido (NDN)	small	mod	mod	7	$6.1K	low	high	LOW/MOD	mostly smooth	mod/high
Astoria (NDN)	small	minor	good	3	None	high	high	LOW/MOD	smooth	high
Calston (NDN)	small	mod	poor	9	None	mod/high	mod/high	LOW/MOD	mixed	mod/high
Nearly none										
Dun Hollow (IV-C	small	minor	poor	7	None	low	mod	LOW	rough	low
Proville (IV-C)	mod	minor	mod	7	$180K	high→ low	high	LOW	very rough	low
Burton (NDN)	small	minor	good	3	$3.1K	mod/high	high	LOW	smooth	mod

*good at district level, poor for students.

weighted sum of three variables at left, scaled 1-5.

@ IV-C funds, to adopt & disseminate NDN innovation

BEST COPY AVAILABLE

mounted.* Funding would of course be larger with the typical large-scale innovation; funds would also enable more delivery of assistance, especially when special training events or outside assisters were involved. Broadly, we can see from Chart 22 that more funding does indeed mean more assistance. There are two deviant cases: Masepa, where only moderate funds were available, but assistance was very high, probably as a result of the missionary zeal that developed during implementation;** and Proville, where a heavily-funded program foundered through increasing central office indifference and building-level resistance.

Central office commitment is high in nearly all sites, and indifferently predicts levels of assistance, although the low commitment in Lido and Dun Hollow is noteworthy.

We expected that administrative latitude (willingness to allow users to make changes in the innovation, rather than maintaining a prescriptive stance) might work against assistance-giving; permitting energy-saving adaptations would mean that users would encounter fewer stresses, and would need less help. Latitude might be another symptom, too, of low administrative commitment, as at Lido and perhaps Dun Hollow. We do find that moderate to high latitude in all the lower-assistance sites goes with low to low-moderate assistance, as does low latitude with moderate to high assistance (Masepa, Carson, Tindale), so there is some support for our guess. But the relationship is not simple when we turn to other larger-scope innovations. Plummet, Perry-Parkdale, and Banestown all have high latitude, but moderate to high levels of assistance. A careful look back at Chart 15 shows us that most of the assistance in those three sites came from the program coordinator (who was closely involved with the work, like users), and from users themselves; the three sites are all also "special", marked-off, somewhat isolated programs, two of them being rather substantial subsystems. The "latitude" given is essentially freedom for the users to build and manage a demanding set-up (alternative school, work experience program, and at a smaller scale, a remedial lab)----not latitude to adapt the program out of existence.

---

*These three variables are reviewed in more detail in the section on change in the innovation, pp. 215 ff., and changes in the organization, pp. 277 ff.

** Central office people in Masepa were also very good at finding special "pots" of money here and there in the state bureaucracy, and at working out barter-like arrangements that never appeared in formal budgets.

Summary. So, in general, assistance seems to be more likely when large, practice-changing innovations are being attempted, with the support of moderate funds, and where users either have little latitude for change, or use the latitude they are given to supply vigorous, close-up assistance to each other. Central office commitment as such makes little difference in assistance.

Consequences of Assistance

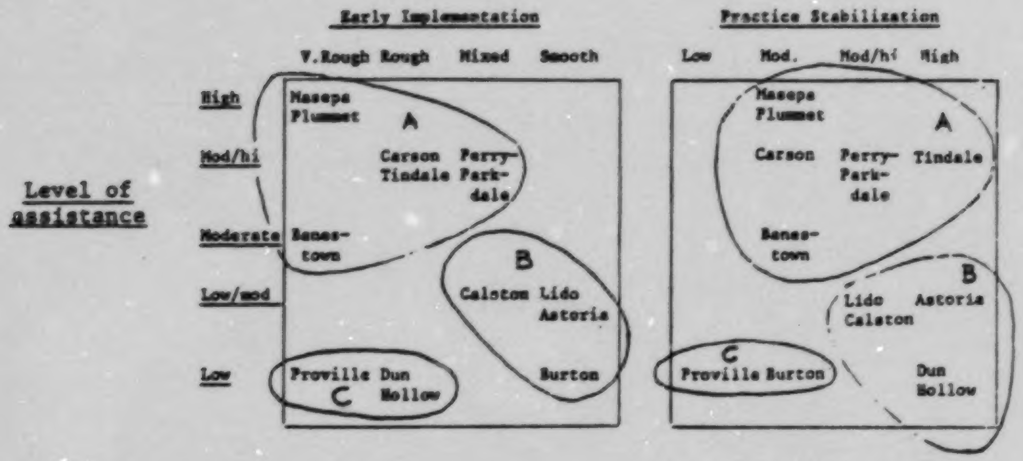
What can be said about the effects of assistance? Generally speaking, large amounts of assistance could reasonably be expected to aid in smoother early implementation, and to result in more stabilized practice* later on. That, presumably, is what assistance is for. The last two columns show our judgments of roughness-smoothness (drawn from the preceding section), and of practice stabilization (drawn from the section which follows this one). The data can be understood somewhat more easily by a look at Figure 5.

The left side of the figure shows us very clearly that sheer amounts of assistance do not make for smooth early implementation. Rather, it seems likely that larger innovations (as per Chart 22) make for rougher early implementation, regardless (cluster A in the upper left-hand corner), and smaller innovations make life easier (cluster B). Cluster C involves assistance incompetence: the low amount of assistance for the weakly-designed and potentially demanding innovation at Proville, and the ineffective attempts of the developer to "explain" the poorly-designed and unexpectedly demanding Eskimo units to the field-testing teachers at Dun Hollow. So roughness

---

* Our measure of stabilization actually includes two parts: practice mastery (user skill in using the practice), and program settledness (the degree to which the innovation has stopped changing and shifting. See pp. 201 ff.

Fig. 5: The Consequences of Assistance


Early Implementation
V.Rough
Rough
Mixed
Smooth
Practice Stabilization
Low
Mod.
Mod/hi
High
Level of assistance
High
Mod/hi
Moderate
Low/mod
Low
Masepa
Plummet
A
Carson
Tindale
Perry-Parkdale
Banestown
B
Calston
Lido
Astoria
Burton
Proville
Dun Hollow
C
Masepa
Plummet
A
Carson
Perry-Parkdale
Tindale
Banestown
B
Lido
Calston
Astoria
C
Proville
Burton
Dun Hollow

in early implementation experience—as we saw in the preceding section—comes from trying big innovations, and assistance is relatively unavailing in the face of their demands. Little assistance is usually needed for smaller innovations, which can probably be smoothly implemented anyway, if they are well designed.*

The right-hand side of Fig. 5 shows us the picture for eventual stabilization of practice in our sites. Here too there are three — almost identical — clusters. For the large-scale innovations in cluster A--which had such a rough start—the more assistance, the more stabilization. As we have already seen, the issue is sustaining assistance during later stages. The cluster B sites managed good stabilization with little assistance; a finding consistent with what we have already noted about the less-demanding nature of the task. Even in Dun Hollow, things stabilized reasonably well, mainly because of the users' support for each other. The Proville site ended with low stabilization (actually, discontinuation of the innovative program), in part because of the very weak assistance provided to a potentially substantial program. At Burton, little assistance was provided, and users achieved only moderate mastery, and moderate settledness (it was very uncertain which parts of the innovation would continue in use).

---

* We do not attempt to differentiate among our innovations on the question of innovation quality. With the exception of Dun Hollow and Proville, where serious design flaws were evident, the remaining innovations were either well validated through the Joint Dissemination Review Panel or state dissemination panels. The only unvalidated innovations, at Plummet and Tindale, struck us as being very well worked out; also, both showed high student impact.

Conclusions

The sites giving high assistance did so with much more diversity, and more sustained energy over the life of the implementation process than the sites where initial assistance disappeared, or was weak and ineffective. Effective assistance was user-oriented rather than innovation- or assister-oriented, and got more so over time. It achieved effects such as reassurance, support, repertoire expansion, problem-solving and increased interdependence.

Assistance events used more frequently in high-assistance sites were external conferences, in-service training, visits, and meetings of committees, teams and faculties. Ongoing assistance was more consistently supplied, and came more frequently in high-assistance sites from materials, peer users, relatives, external agents, and central office personnel.

Assistance was more frequent and intense when large-scope, practice-changing innovations were being attempted, with moderate funding, and when users either had little administrative latitude to change the innovation, or used the latitude they had to supply peer support.

Heavy assistance does not necessarily make for easier early implementation; it is not able to override or compensate for the sheer effects of the innovation's demands, if they are substantial. Of course, weak assistance can make for rougher implementation, especially if the innovation is somewhat demanding. But smaller innovations can usually achieve smooth early implementation without much help. Larger innovations require continuing assistance for eventual practice stabilization, but small ones do not.

Next we turn in more detail to the saga of later implementation.

Later Implementation

Introduction/Overview of Findings

In this section, we take up the second major phase of the implementation chronicle as it played out at the 12 field sites. First we focus on the process of practice mastery as it is achieved by individual users. We try to capture the successive stages or phases of the mastery process, along with the various changes in understanding, affect and behavior that make up the process. We are interested here not only in the sequence of practice mastery, but also in the links between the different components that constitute that sequence - how, for example, users' understanding of what they were doing was related to their day-to-day activities in the classroom, laboratory or field setting.

At virtually all of our 12 sites, users reached a level of mastery that they, and later we, referred to as a "settling down" or "stabilizing" of the innovation, when they "got on top of it" or "got a handle on it," then began to branch out beyond this practice or to integrate it into other curriculum components.

At this point, however, the plot thickened. Decisions about continuation, integration or new directions were no longer predominantly an individual issue, but rather an institutional issue. More vexing still, the institutional issue was often itself a hostage to the larger political and economic situation in the district. Taking our 12 sites, for example, we estimated that levels of practice mastery were moderate to high at 11 sites, but that continuation at the same level of effort was only assured at five sites, of which three were direct or indirect victims of environmental turbulence in the form of a budget crisis.

Components of User Practice Mastery

In the section on early implementation, we said that practice mastery was not an event but an accomplishment, gradually and often painfully achieved. That section, in fact, reads more like a litany of woes than a forward progression. Surveying our 12 sites, the good news is that most users at almost all sites attained what they and local administrators judged to be a satisfactory level of expertise in the new practice within two years---in most cases, within 18 months. (And at sites where the innovation had been scaled down to a modest effort, practice mastery came after 5-6 months.) After the achievement of reasonable practice mastery, energies went into refining, de-bugging and extending core components. However, mastery was never complete, often because users went on to more challenging or ambitious tasks, but also because inputs changed (ex: a new student population) or because resolving one problem led to a new, unresolved one. As the project director at Perry-Parkdale put it: "You think you're on top of it, then something happens."

If we break out the population of users in the moderate- or high-change sites with more than 18 months of experience with the innovation, and set them against others with from 3-6 months' experience, the contrasts are striking. In general, insecurities give way to securities, doubts to confidence and vulnerabilities to a sense of being in control. Although some sites have thin data, in all cases there was a roughly similar profile of progression with respect to (a) main feelings, (b) levels of understanding of the practice, (c) catalogues of segments mastered and of parts that still felt shaky, (d) main tasks and activities being carried out and - with somewhat more dispersion among sites - (e) remaining problems or concerns. Let us review these modal patterns.

Feelings. The overall image here is one of self-efficacy. Users see themselves as in the saddle, as operationally effective on a daily basis and as increasingly successful in getting the results they are after. Being efficacious gets celebrated in the following four ways:

1. Being "comfortable." Users say that they are "at ease" with the practice, that they feel "secure" and, usually, "relaxed." In virtually all cases, the "comfort" is the result of mastering the innovation technically, of getting better at doing it.

2. Being confident. A teacher at Banestown captured the general sentiment by saying, "Now I know I can deliver; before, I wasn't sure." Some users got slightly manic:

> This year is a breeze. I feel like
> a hot-shot. (Teacher, Calston)

Confidence seems to come from getting good results, and getting them consistently rather than randomly, as was often the case initially. This leads to the next sentiment:

3. Being in control. The metaphors are instructive here. Users talk of "being on top of it," of "getting a handle on it," of "getting it to go my way."

4. Feeling gratified. The obvious source of gratification is, presumably, successful results in terms of pupils' performance increments or attitudes. But users at our sites are not chaining gratification to these summative indices, but rather are mentioning short-term rewards, such as "good days" and positive feedback from pupils. When "the kids say they like it" - especially the difficult, under-achieving or turned-off pupils making up the majority of the target public at our sites - their

teachers "light up."

In all cases, informants say that they worked through to these sentiments, that these feelings were achieved or earned. This can be shown inferentially. For example, no one talked of being "relieved," as would be the case if problems simply went away or got easily resolved. Rather, being confident came gradually from being increasingly less insecure, and feeling gratified came after repeated instances of feeling overloaded or downtrodden.

There were also less-sanguine feelings. At Dun Hollow, and in the third year of use at Lido, users felt disappointed and discouraged, either because the program was ineffective or because external support had waned. There were also some pervasive sentiments of "burn-out" at sites with complex innovations (ex: Masepa, Carson and Plummet). More on this later. But even in these cases, users invoked and enjoyed the experience of having achieved practice mastery and of having "reached" pupils.

Understanding. Our data are uneven here. At only six sites are responses fully comparable. What data there are point to a sharper, more differentiated and more inclusive understanding of how the new practice works. Users at Banestown, for example, where we probed fairly deeply for cognitive changes, spoke of "seeing it as a system," "seeing how it all comes together," or "putting the pieces together" as a result of their experience with the remedial laboratory. Until the middle of the second year of implementation, these same informants had used images of non-differentiation ("kind of a vague idea"), and non-integration ("a hodge-podge"). They now had a better mental road map, and were using it to get results more economically, to reconfigure the practice or to trouble-shoot emerging problems. Learning about the innovation meant learning what could be done with the innovation, and doing it made for a more differentiated and integrated vision of how it worked.

Parts ready/parts unready. Here we have usable responses for 8 sites. The overall assessment, by about midway into the second year of use, was that "things were falling into place" (Banestown), "a routine was consolidated" (Masepa) and procedures were "easier" (Carson) or "more streamlined" (Perry-Parkdale). If we pull these strands together, the dominant message is that the components of the innovation are securely in place.* Doing them is easier, goes more quickly, has predictable effects and "works" progressively better. This, in turn, is the fruit of successive approximations, of a better understanding of the practice and-a key ingredient-of a parallel level of mastery and habituation on the part of pupils. Two excerpts on this last aspect:

> This year I have no problems with 4D. I know the placement tests...I know what to say to the student to get him right in the groove. (Teacher, Calston)
>
> It's...more streamlined. We know where the kids are; they know what the deal is. (Learning manager, Perry-Parkdale)

A caution here: as we suggested earlier, being on top of the program did not always mean users liked it, although they usually did. Some users at Masepa, Tindale and Dun Hollow, for example, found the innovations, as a Tindale teacher put it, "distasteful," but felt (and were observed by field researchers to be) pedagogically secure. An illustrative opinion:

---

*This does not necessarily mean that the components as defined by the developer are in place; as we shall see shortly(pp. 215 ff.), what gets into place is frequently an adapted, revised, bent version.

> We know what we're doing and how to do it, but everyone's hoping we won't be doing it again next year. (Teacher, Dun Hollow)

Even after 18 months, there were usually components that had not been mastered, especially in the case of more complex and demanding projects. While users at Astoria could say they had few difficulties because "I'm doing very little differently from before," the practice change gradient was steeper at Carson, Masepa or Plummet. Here, many users were struggling to come to grips with core components for two years and some were doing so for three years

The more complex parts of all practices naturally took longer than simpler ones. For example, teachers at Banestown had learned to set up daily remedial routines for groups of 3-5 pupils coming to the lab, but were still unable to get beyond batching to the individualization of daily exercises. At Masepa, developing higher-order skills, such as analytical reading, called for a difficult integration of instructional procedures, whereas word recognition, a constituent part of analytical reading, was simple to program and monitor. And at Burton we have another good example of the hierarchical character of practice mastery. Users were able early on to use selected parts of the new social studies curriculum. At first, they simply added these segments to others already in place. But accretion meant overbudgeting available time. This led to a second phase, during which users trimmed some of the new materials, and cut back more on the traditional lecture and discussion components. The two units then ran side by side. But this made for incoherence, since each unit had been coordinated with the parts that were now removed, but not with one another. So, near the end of the first year, users began to integrate the materials from the new and old curricula to form a coordinated program that was more than the sum of its parts. Consequently, in the initial phase, users felt that their chief problem was lack of time; in the second, that their teaching was disjointed or scrabbled; and by the third phase that an integrated program was in place but needed to be fine-tuned.

Main tasks and activities. What were users spending most of their time on during later implementation? If we define later implementation as after 6 months for low-change projects, and 18 months for the others, we can sort the responses into six categories.

1. Reaching up. Users are spending more time on the most complex parts of the project. In particular, they are moving from the basic routines to the more difficult and demanding segments. For example, we just saw that teachers at Masepa reported they were getting to the "higher order (analytical) skills" only after having mastered the instruction for basic skills of word recognition and spelling.

2. Improving, debugging. This activity is directly focused on the program's flaws. Having worked through the components and tested them thoroughly, in some cases, on at least two groups of pupils (first-year and second-year groups), there is some closure about which components need weeding out or strengthening. For example, lab teachers at Banestown began looking for new materials to replace what they found to be ineffective exercises within the Catch-Up recommended set. Teachers at Dun Hollow scrapped most of the original Eskimo core materials in the project and made their own.

3. Refining. During the second year, teachers at Tindale began what they called "routinizing" procedures, which entailed both a

codification (in manual or guideline form) of instructional routines for the reading program and a set of core exercises——a sort of "automatic pilot" repertoire——to be used for each component. A similar, school-level codification took place at Carson. At Astoria (after 5 months), users began to work with sub-groups, differentiating treatments within the program for specific pupils.

4. Integrating. The earlier illustration from the Burton site shows how users move beyond basic mastery to attempts to fold new materials into existing ones. Most of the add-on or drop-in innovations required such a phase. At Calston, for example, one of the more intractable problems was the meshing of the new 4D reading program with the district reading program.

5. Adapting. This category is instructive; it reminds us that the larger context surrounding these projects is not standing still. For example, at the start of the second year, users at Lido began to get a less-responsive, lower-achieving student public, for whom the original program format was, in parts, ill-designed. So revisions had to be made, then looked at again when virtually the entire pool of students in the third year turned out to be low achievers.

6. Extending. At some sites, we asked informants to put names on the different phases of practice mastery as they saw them. One user at Banestown came up with a label that fits others' experiences well. She said,

> Sort of like branching out, you know, trying some new things, putting the pieces together another way....now I've got it under control pretty much and I can look for other things to put in it.

Usually, branching out meant one of two things: looking outside the project for materials or exercises that could be incorporated into it, or, alternatively, transferring components of the project to other segments of one's activity. For instance, a user at Lido began to elaborate a community-based project drawn from his field work with high school students.

There are more economical ways of describing this progression from initial to more consolidated practice mastery. For example, the six participles described above can be inserted in the progressive "levels of use of the innovation" identified by Hall, Loucks et al (1975). We saw before that early implementation corresponded to the difficult, disjointed "mechanical use" phase. The next notch up on the LoU scale is "routine use," during which program execution is stabilized, with few, if any, changes made or envisaged. Users are essentially "doing" the innovation, with fair success and little stress. The next phase is "refinement," in which users vary parts of the innovation in order to heighten its impact. Next is "integration," when users are "combin(ing) their own efforts with others" in extending or refining the new practice. Finally, there is "renewal," during which phase users seek or make "major modifications" in the practice.

There is no clear evidence at our field sites that one of the six activity types we outlined is necessarily antecedent or superordinate to the others—that, for example, refining took place before or was pre-requisite to, extending. Rather, these seem to be simultaneous activities during later implementation. We have some data suggesting that "reaching up" to the more complex segments happened before "extending," as if the practice needed to be consolidated before users would look beyond it. But, even here, users seemed to be "extending" beyond *some parts* they had mastered, while at the same time "improving" *other parts* they hadn't successfully come to grips with, and "refining" still other parts. In other words, the innovations were not monolithic. Implementation was like a sculpture in process, on which some parts of the body were rough-hewn, other parts already distinctive but needing fine chisel work, and still other parts fully completed and integrated into the larger vision of the work as a whole. Users were moving from one part to another, depending on their energy, the responses of pupils, the certainty of getting outcomes to correspond to treatments, and the environmental pressures exerted by key actors elsewhere in the school or district.

But the Hall and Loucks categories are more *inclusive* than ours, and thus a useful boiling-down device. Note that we also had a measure of users' level of use of the innovation, taken from the survey data. We shall look at these results toward the end of this section (p. 203).

Problems and concerns. Surveying the 12 field sites, we have a very mixed bag. For the most part, the problems line up well, logically enough, with the six principal tasks we just listed. Obstacles met in accomplishing these tasks turned into perceived problems and concerns.

Table 12, on the next page, orders and illustrates the relationship between problem areas and principal tasks in later implementation. The table also reminds us that, though later implementation was far smoother than early use, there were still some virulent bugs, loose ends, structural incompatibilities with existing arrangements, unsuccessful

Table 12: Problems and Concerns Stemming from Major Tasks of Later Implementation at Field Sites

Task/Activity	Problem type	Illustrations
Reaching up	Difficulty in mastering more complex components	"Some parts just aren't working. They're harder than the first ones I did" (Teacher, Masepa) "I still can't monitor the children's progress...there are too many pupils to keep up with." (Teacher, Calston)
Improving, debugging	Solving specific problems, often connected to poor program design	"The bookkeeping is awful." (Teacher, Banestown). Paperwork (Perry-Parkdale, Carson). Scheduling problems (Banestown, Calston, Carson and Proville). Pupils disturbing, interrupting each other (Perry-Parkdale). "Materials [that are] not right for this age." (Dun Hollow)
Refining	Differentiating, tailoring	"needs tailoring...the time isn't there" (Teacher, Lido) Inability, despite repeated attempts, to break down groups into individual exercises. (lab teachers at Banestown)
Integrating	Combining new project with regular curriculum	"Will this destroy my own curriculum? How can I fit it in?" (Teacher, Burton) Lack of time to do both old and new (Calston, Dun Hollow, Carson)
Adapting	Accommodating the project to new inputs	"The course is all floaters now...I get the burn-outs, who sit in a daze and are hard to reach." (Teacher, Lido) Changes in released time, budget decreases (Lido); new testing requirements (Banestown)
Extending	Using components elsewhere, reorganizing practice, bringing in other segments	Trying to bring back former "stuff that worked" (Masepa); feeling "bored," looking for more stimulating materials (Tindale)

BEST COPY AVAILABLE

attempts to resolve many of these difficulties, or new problems emerging out of the resolution of old ones. And there were a number of sites (Masepa, Perry-Parkdale, Carson and Plummet)—typically, but not exclusively, places with a high degree of practice change—where many users felt after two years that they were not fully on top of the project. Here, for example, is an assessment after two years:

> Everything in the program is looking good, but it has to be implemented...Some teachers still don't feel comfortable with the plan form. There are many loose ends. Many teachers are still grappling with implementation. (Program director, Carson)

But the constellation of problems and concerns has changed from that seen in early implementation. For example, there are few laments over personal or professional capacity to carry out the project. Those issues seem to be settled, as does the concern over what others will think. This shift is rendered well by one of the lab teachers at Banestown:

> I was a lot more off myself and more on the kids. I wasn't thinking about myself so much, but I was asking and checking, "Is this material right for them? Is this going to work for each one of those kids?"

This shift - from oneself to one's task at hand - is a classic phenomenon in the research on adult learning and innovation implementation. Hall (1976) captures it well in his sequential model of "stages of concern" on the part of teachers executing a new practice. The later stages of that model describe economically the problem areas we have just examined:

> Concerns about management with "attention focused on the processes and tasks of using" the innovation efficiently, with paramount concerns turning around "organizing, managing, scheduling and time demands;"

Concerns about consequence, notably the "impact of the innovation on students" in the immediate sphere of influence. This is a concern for improving outcomes and making the changes enabling that:

Concerns about collaboration with others, in relation to the innovation; and

Concerns for refocusing, with consideration of major changes, replacements, alternatives.

Our evidence on whether there is a linear or ordinal progression through these stages of concern is mixed. We have already noted that a progression from self-centered to practice-centered concerns occurred in our sites. We also noted that "management" concerns seemed to be paired with hard-to-master components, and "consequence" concerns with components under control. But by and large, though there was often a dominant concern, we could, like Hall and George (1978) usually see all types of concern ongoing, side by side, within most of our sites, and within many of our users. For example, longer-implementing sites (and users) were not necessarily more caught up with refocusing issues than were newcomers. So there is probably not a hierarchical, orderly progression of concerns.

Darker and Broader Concerns

There is still more to the story of users' concerns during later implementation. Because we have fastened onto the process of practice mastery and what gets in its way, we have overplayed the technical or instrumental aspects of mastery over other problem areas. Up to now in this section, we have underattended to the pain, noise, friction and organizational concerns of later implementation.

Many of these themes have been treated elsewhere in our report.

For example, changes in the innovation are studied as responses to personal and organizational incompatibilities (see pp. 226 ff.), and user change is treated in part as a response to the demands of the innovation at the classroom and school levels (see pp. 267 ff.). In other words, the problems of early and later implementation led to transformations in users, the innovation and the organization. Here, we should probably limit ourselves to a brief summary of later-implementation concerns that are not directly practice-mastery-connected, but do take their toll on program execution as a whole. The summary appears in Table 13.

Table 13: Later Implementation: Additional Individual and Institutional Concerns

Type of Concern/Item	Sites at Which Item Mentioned
Individual Concerns	
Relational problems—friction among project staff	Banestown, Perry-Parkdale
Motivational problems (discouragement, disenchantment, "distaste" for the practice)	Calston, Lido, Masepa, Dun Hollow, Proville, Tindale
Stamina, exhaustion, excessive demands of the project	Masepa, Carson, Plummet
Institutional concerns	
Lower institutional or district-level priority of project (with attendant lessening of rewards)	Lido, Plummet
Poor overall functioning (project as a whole, or a component)	Perry-Parkdale, Dun Hollow, Proville
Resistance, obstruction, lack of support by other staff not on project	Banestown, Perry-Parkdale, Carson
Worry whether project will "deliver" on its promises or objectives	Banestown
Continuation the following year(s)	Banestown, Calston, Lido, Perry-Parkdale, Plummet

Note that only two sites escape unscathed — Astoria and Burton, both places where the change effort was drastically scaled down from the program developer's version. Table 13 doesn't tell us anything about the gravity, pervasiveness, or the real impact of the concerns----all of which varied from site to site. But it does show us several more-general things. First, there were many non-technical concerns during later implementation. These include at least one item ("stamina") where the concern is a carryover from early implementation, and is still self-centered. Second, it is clear that project staff have concerns during later implementation that are institutional worries, going well beyond practice mastery. Lido, for example, is a site where the innovation's users are technically masterful but where institutional support has eroded----for reasons largely independent of the merits or demerits of the program itself. So mastery may assuage institutional problems, but by no means resolves them, since political rather than technical factors are at play. More on this in our summarizing remarks below.

Later Implementation: a Profile of Two Sites

It may help us get closer to the realities of later implementation if we focus for a while on the two sites we profiled earlier, Lido and Masepa.

Recall that Lido was the locus of a modest add-on project in field-based science instruction and that early implementation went smoothly, while Masepa implemented a complex and demanding integrated language arts curriculum, and had a somewhat nightmarish initial experience.

Looking first at Lido, here is a summary chart for the second year of local use.

Chart 23: Users' Second Year of Implementation at Lido

	FEELINGS/CONCERNS	HOW INNOVATION LOOKED	WHAT WAS USER DOING MOST?	PROBLEMS
Vance	More comfortable w/ style of teaching and w/ having kids outside	Still useful, giving good direction & helpful ideas, activities	Working through materials Giving, participating in env'l educ workshops Working w/ community Off-campus site work	Time too limited for tasks to be done
Drew	Concern w/ growing number of non-achievers in forestry/ecology class	Too discovery-oriented for kids w/o biology basics; lecture style more appropriate	Adapting materials & lessons to growing non-achiever population Off-campus site work	Dealing w/ more non-achievers successfully
Carroll	Excitement with new activities, expanding science program	Same as first year	Working w/ community Giving, participating in env'l educ workshops Off-campus site work	Over-extended activity commitment

There appear to be no insurmountable technical problems. Feelings are for the most part those of comfort and excitement. Users appear to be spending most of their time on what we called "adapting," in this case as a result of the shift in the student population, and on "extending" the new practice to other publics. The main concern is that of making the program work for low-achieving students.

Now to a summary chart of the third and fourth years:

Chart 24. Users' Third-Fourth Years of Implementation at Lido

	FEELINGS/CONCERNS	HOW INNOVATION LOOKED	WHAT WAS USER DOING MOST?	PROBLEMS
Vance	Amount of time and energy required Lessened admin. support	Same as years one & two Requires full year, not 1/2 year	Preparing for classes Working w/ community Maintaining site, buses	Loss of released time for off-campus duties Budget decrease 4th year: all non-achievers in class
Drew	Discouragement w/ guidance policies, level of students	Too sophisticated and conceptual for non-achieving students	Same as second year Maintaining buses, site	Loss of released time Budget decrease All non-achievers Guidance's holding bin attitude tow'd program
Carroll	Amount of time and energy required Lessened admin. support (new principal)	Same as second year	Same as second year Maintaining site buses Increased env'l role in community	Loss of released time Budget decrease Too many activities Lessening rewards

At a technical level, the next years are pretty much more of the same. The low-achieving population still poses problems, but we can infer from the third column that users are essentially refining and extending the project. However, the technical aspect is secondary to the institutional problem that seems to be building: less administrative support, a lower budget, less released time, and as a consequence, discouragement, less energy, probably less commitment. In this particular case, personnel shifts (a new principal) and changes in the physical plant (a new, less-crowded building, making the use of field sites less appealing) loom larger than mastery issues.

Turning now to Masepa, we have a very different picture. Virtually all the issues are pedagogical, and remain so over time, in part because administrative support and control are stable and the political environment benign.

Let us first pick up Masepa where we left off (see Chart 13, p.121). Users were typically harried, unable to get beyond minimal coping, insecure about their ability to master the practice and operating with a simultaneously undifferentiated and fragmented vision of how the project worked. Chart 25 picks up Masepa teachers in the final 6 months of their first year of use. For facility of analysis we will stay with the same three informants.

Chart 25: User Behavior and Attitudes at Masepa: Mid-November--May (Second 6 months)

Users	FEELINGS/CONCERNS	UNDERSTANDING/ HOW IT LOOKED	PARTS READY/ PARTS NOT READY	WHAT DOING/ SPENDING TIME ON
R. Quint	Same as earlier- "not settling down"	Basic format clear Only 1-2 parts very clear, but appear arbitrarily put together	+"Survival cycle" in place -Errors in materials	Getting minimally through cycle; creating, borrowing materials
F. Morelly	"More comfortable - can do the minimum" Can't do it as prescribed, will have to make changes Low retention? going through skills too quickly	"Saw major features" "Looked disconnected"	+"Basic things in place.. not even looking at anything else"	Consolidating skills, practice time (not trying to add comprehension skills) Beginning to add grammer, worksheets
L. Brent	"Some kids wasting time" Exhaustion Insecure and afraid Boredom: "every day the same thing" Doing too little of the program	Focusing on 2-3 components, even these not clear Aware that "more in it than I thought"	+Pieces of each component ready -Aware of not doing many key parts	Perfecting the basic cycle Trying to control actual mastery levels Trying to put together a group of core materials - misplacing, forgetting, not finding

Practice mastery is still problematic for all three. Most of the same concerns, understandings, and coping behaviors are present, but we seem to have moved up a notch on the daily survival scale. A "basic format" is in place, typically the simplest or more mechanical components of the project, and users are putting most of their energy into making these parts behave predictably. Time perspective is short-term; teachers are essentially trying to make it through the week. Understanding of other parts, of the overall program, or of the relationship between the skills being taught and the next segments to teach, is dim. Another user at Masepa put it well:

> I didn't see where the grammar fit in.
> I couldn't connect the results I was
> after to the drills and exercises...
> I didn't know when to do what. There
> were a whole lot of mysteries.

Still, we can see some hopeful signs: feeling "more comfortable," "consolidating" and "perfecting" a minimal instructional cycle, making appropriate changes. Note, however, that one user, L. Brent, is still in trouble at the end of her first year, and appears to be nervously strung out (see col. 4 in particular). Her profile is a classic instance of how anxiety inhibits task performance.

Fortunately, the situation brightens during later use. In Chart 26, we pick up R. Quint near the end of her third year and F. Morelly and L. Brent near the end of their second. Reflecting our research questions on later implementation, our summary chart is differently formatted. It is collapsed into three gross categories: indicators of practice stabilization, indicators of unsettledness, and changes that users are considering.

R. Quint is a good cameo of practice stabilization, which we set at the upper levels of practice mastery, roughly equivalent to the Hall and Loucks "routine," refinement" aud "renewal" stages. She feels com-

Chart 26: User Practice Stabilization at Masepa

	Stabilization Indicators	Indicators of "Unsettledness"	Changes Envisaged
R. Quint	"On top of it now" -more at ease -going more quickly -materials well stocked -children starting to enjoy it	"not on top of" -comprehension skills -poetry, creative writing	Thinking of "sticking in a new reading program now"
F. Morelly	"Many things falling into place now" "More comfortable... a routine down, a rhythm" "Know the program better and doing things my way"	Work on back-up skills component	Adding new components in ECRI program Refinements: changes in dictation and penmanship
L. Brent	"Basics are ok now" Getting through it faster Getting to other basic components	"Still don't understand it" "Still don't accomplish as much as I should" Not "on top of the recording"	Adding new components in ECRI program Putting in one or two "of my own things"

fortable, confident, in control and gratified by pupils' enjoyment of the program. She is considering a major reshuffling that looks more like what we called an "extension" than an "integration." She is now at grips with the more-demanding higher-order components of the program, the ones built on the basic cycles she has now mastered. Instruction goes more quickly; she has presumably grooved her pupils and has habituated her routines so that each segment of the program, including pupil responses and performances, has a set of action algorithms that get automatically "fired" when needed - something like: "In this case, I can do x, y, or z, but for this particular child I think a combination of y and z is a good bet."

We find most of the same leit-motifs for F. Morelly. She too is taking up more complex parts of the project, but, interestingly, the "back-up skills" component is one which R. Quint has already mastered. She is spending her time "reaching up" (to new components), "debugging" and "refining."

L. Brent is still in trouble near the end of her second year. She seems to be somewhere between the "mechanical" and "routine" level of use, with a basic repertoire in place but with a strong dose of stress——in part due to social comparisons between users. For example, she remarked that she was "behind" others at Masepa who had started a year later than she.*

Chart 26 also shows some conceptual unsettledness for Brent. The suggestion here, as elsewhere, is that cognitive mastery — understanding the project, seeing how outcomes are linked to exercises, being able to mentally juggle program segments—goes hand in hand with technical mastery. This, in turn feeds into affective states. Here is the way these three facets came together for F. Morelly:

> Field notes: She said that she understood the program more and was enjoying it more after Christmas...she had a better sense of the timing she would need for each segment...it was easier to move smoothly from one component to the next one. She says that this made her feel more secure and, as a result, she enjoyed the program more. "By the end of the year, I didn't have as hateful a feeling."

The Process of Practice Mastery: a Summary

Keeping the Lido and Masepa illustrations and our earlier summaries in mind, let us try a synthesized view of how practice mastery proceeds. It seems to follow a basic learning-theory paradigm, as applied to behavioral change in complex social settings. There are successive cycles of "practice→ expand→ practice," during which users evolve first a set of practical decision rules, then "routines" or action algorithms for an increasing number and variety of situations. These increasingly well-rehearsed mental plans trigger responses which, over time, come automatically. We might compare, for someone learning to drive, how the complexity of braking, accelerating, changing gears, negotiating turns — sometimes all at once or in rapid succession — gets gradually automatic. Once that happens, things go more quickly, less stressfully, and to more effect. The successive cycles of trial and error turn up procedures that work consistently. At the same time, seeing how these

---

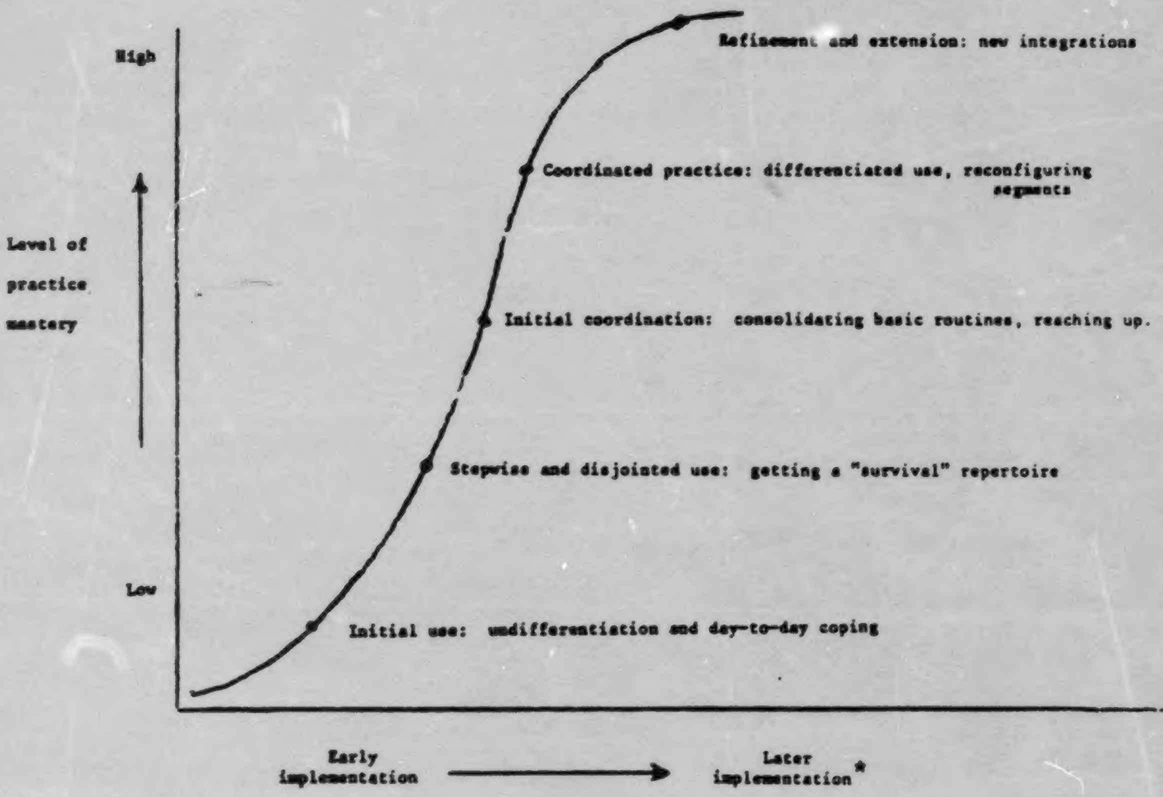
*We should note here that all users were observed at least once, and their levels of mastery compared to the Hall et al. LoU measure as well as to their remarks during interviews. At Masepa, each user was observed 3 times in the course of the year.

procedures work - by varying them, by seeing what else happens, by finding out under what conditions they don't work - gives users a more differentiated understanding of the project's structure. Then come refinements, for segments already debugged, along with integrations and extensions, as users get a broader view of what this practice does in relation to other things they are doing or would like to do.

Finally, getting better and seeing results tends to channel more energy into the progressive cycles of mastery, and lend confidence for making small leaps to the next, or more difficult, parts.

We might usefully plot this progression on a classic learning or "S" curve, like this:

Fig. 6: Practice Mastery Plotted as a Learning Curve


High
Low
Level of practice mastery
Refinement and extension: new integrations
Coordinated practice: differentiated use, reconfiguring segments
Initial coordination: consolidating basic routines, reaching up.
Stepwise and disjointed use: getting a "survival" repertoire
Initial use: undifferentiation and day-to-day coping
Early implementation
Later implementation*

---

* The reader is reminded that adequate mastery may take up to 3 years, so the steepness of the curve should only be taken as a schematic representation.

The progression on the curve follows the successive cycles of practice → expansion → practice that we have developed, with the caveat that users can be at different stages for different parts of the new practice in our analysis. We have tried to yoke cognitions and actions, so that low differentiation and poor conceptual integration go with fragmented use, and increasing cognitive mastery covaries with smoother execution. Finally, when users have an elaborate mental road map and a series of well-grooved routines, they can then move on to conceive new configurations, including integrations with other parts of their work and extensions to new practices that seem like the logical next steps in classroom or school-level improvement.*

The figure also reminds us that mastery is not linear; a more empirically faithful curve, in fact, would probably look more like a slowly-ascending roller-coaster. All informants spoke of setbacks, plateaus, reversions to prior practice or of "freezing" the project for a few weeks while they gathered energy and rehearsed the parts they considered crucial. Here is a description of the freezing process from one of the lab teachers at Banestown:

> I got overwhelmed, so I went back to the DISTAR stuff I used before I came to the lab...I guess I was trying to gain time so I could figure out how to make the lab work right. I sort of had to slow things down so that I could get on top of it. So I went back to the things that I knew the kids would need and I knew how they would work, those materials I mean.

Finally, let us try to assemble in one place the several components of practice mastery we have covered in this and the section on early implementation. This is done in Chart 27. Note that we begin "before the beginning" and trace how users conceptualized the practice, their cognitive

---

* As in other aspects of life, "can" and "will" are not identical. A user capable of moving on to a new level may not necessarily do so, depending on factors like commitment, supports for institutionalization, and others.

Chart 27: Synthesis of Early and Late Stages of Practice Mastery

STAGE	CONCEPTUALIZATION OF THE PRACTICE	COGNITIVE ACTIVITY	INSTRUCTIONAL REPERTOIRE	CONCERNS
1. Pre-Implementation	Undifferentiated	Simulated conceiving, planning activity and management sequences	"Untested"	Informational(SoC): Characteristic effects, requirements for use
2. Initial Use	Disjointed, unconnected components	Multiple discrepancies between predictions and observation of outcomes	Confrontation—many prior algorithms not effective. Multiple demands; apparently disjointed, irreconcilable with own teaching. Reversions to prior repertoire when possible	Personal-Ego concerns (SoC): Professional adequacy - Evaluation of peers Control of classroom Reconsideration of incentives
3. Stepwise and Disjointed Use	Whole reduced to 2-3 parts, with hypothesized simple causal relationships between them	Focus on 2-3 macro-components; trial and error to determine constraints, erratic predictive accuracy	Mechanical use (LoU) Running stepwise through basic steps Reversions to earlier practice	Minimal management (SoC): achieving mastery of 1 or 2 components while keeping basic order, maintaining goal direction in other activities
4. Initial Coordination	Some functional relations perceived between subparts, and between parts and whole	components still disjointed, minimally coordinated; conceived as chunks of activities and practices on some skill or at certain time of day.	Mechanical mastery—more ease in getting through routines, linking these routines to other ongoing classroom work Close to LoU "routine use"	Management (SoC): get ahead of basic organization of program Scheduling, pupil management, anticipating next frames, providing for difficulties
5. Coordinated Practice	High differentiation and coordination; details of program are related across components and to whole	Conceiving new combinations of elements in practice; reorganizing specific parts and correctly predicting effects of use	Coordinated work; inserting and linking parts according to contingencies Introduction of parts of program to other skill areas or activities	Consequence (SoC): Assuring optimal organization, monitoring student process; trying to increase achievement level
6. Refinement and Extension	Extensions of schemata (concepts of instruction) to include other components of one's own practice, and to other as yet untried practices	Conceiving alternatives; can integrate components into this practice from another ongoing practice	Refinement; initial tryout of integrations, extensions from other sources Close to LoU "refinement" and "renewal"	Maintenance and extension; keeping basic level of efficiency while incorporating new parts and discarding or recombining others; getting management in place for more elaborate practice Close to (SoC) "refocusing"

LoU-Levels of Use of the innovation (Hall et al 1975; Loucks et al, 1975)
SoC-Stages of concern (Hall, 1976; Hall & George, 1978)

BEST COPY AVAILABLE

attempts to determine how it "worked," their day-to-day actions, and their chief concerns. Also notable is the strong overlap between our findings and those of Hall et al., lending thereby some additional external validity to both the "Levels of Use" and "Stages of Concern" scales.

Stabilization and Continuation

In reviewing users' concerns during later implementation, we saw that school and district-level factors began to intrude into users' plans to continue with the new practice. Recall from Table 13 that at five sites, users felt continuation was uncertain, and that at 2 of these (Lido and Plummet) lower district-level priority for the project meant that users could expect lowered assistance and support, even without a formal decision to end the project.

This finding is an important one, in that it displaces our focus from individual to institutional factors. Innovations can be technically mastered, perhaps even shown to be effective, but this does not ensure their continuation. We could even have the inverse relationship: practices could be poorly mastered by users and still be continued by administrators, for political reasons. To be sure, if an instructionally effective practice outperformed its predecessors, the next reasonable /rational step would be for administrators to conclude that it was worth institutionalizing. But educational politics often follow strange paths. Take Lido, for instance, where the environmental science project was applauded by Board, students and teachers, but got increasingly squeezed out for lack of support from a new principal and lame-duck superintendent, and because field-sited projects had less appeal when new facilities became available. Or Dun Hollow, where teachers experimented thoroughly with an Eskimo studies project and judged it unfit for disrict-wide diffusion, only to see the superintendent recommend expansion of the project. Or Astoria, where the decision to institutionalize a kindergarten screening project was made for 92 district schools *prior* to the time when (in Mitchell school, our focus) it was found so inappropriate by teachers that they simply farmed out segments of it to aides in a pull-out format.

This decoupling between the mastery/endorsement of users on the one hand and the usually administrative decision to continue or discontinue an innovation only says that substantially varying criteria are being used by different actors.

Operationalizing stabilization of use. Let us try to examine more systematically the relationship between stabilization of use and continuation of the innovation. What constitutes stabilization of use? Up to now, we have come close to equating user practice mastery with stabilization by suggesting that when users get on top of the project, it settles down. Even later user-initiated changes in an integration or extension mode are usually made, we said, from a solid base of instructional control over classroom life. But we do have instances where user mastery is relatively high, but the program remains unsettled (ex; Plummet, Perry-Parkdale, Carson). So user practice mastery is probably contributing to program stabilization and vice versa, but not determining it. In other words, there must be other sources of stabilization of use than practice mastery. What might they be?

In our explanatory analysis (Chapter VI), we try to identify and account for several sources of ultimate stabilization, including administrative constraint, input shifts, personnel changes and program expansion. Our task here is more descriptive. We want to specify a generic factor that adds to the final estimate of stabilization of use that part of the equation not covered by user practice mastery. We shall call this factor "program settledness" to indicate that core components of the innovation are no longer being added, deleted or transformed. In causal terms, we are saying that the several sources listed above eventually induce higher or lower program settledness. This global factor, when combined with user practice mastery, gives us a composite index of stabilization of use.

How do our field sites perform on each of these constituent measures (practice mastery and program settledness) and on the composite stabilization index? Chart 28 shows the relative estimates, taken from the 12 causal networks; and from the survey measure of levels of innovation use [LoU]. Chart 28 has some valuable information. First, overall levels of stabilization of use are moderate to good overall. Practice mastery is bringing the general stabilization level slightly up and program settledness estimates are bringing it slightly down, suggesting that users settle down before programs do. Also, except in the low-stabilizing sites, the two indices (mastery and settledness) are usually at the same level, suggesting that they are related.

Sometimes this relation is very close. For example, one of the final three users at Calston remained uncomfortable with the program, variously using and suppressing parts in a process that translated into uneven practice mastery. There was a very similar phenomenon at Burton. At Banestown, the practice was complex, and we came upon users when they were just beginning to get it under firm control. In these cases, mastery and program settledness are inseparable. But there was sometimes no relationship at all. For example, program settledness at Astoria owed virtually nothing to user practice mastery, but came largely from some early and major amputations of core program components. And at Masepa,

Chart 28: Stabilization of Use, as a Function of Practice Mastery and Program Settledness

SITES	Estimate of Program Settledness	Estimate of User Practice Mastery	LoU Rating* & N of Users	Stabilization of Use
Astoria (NDN)	+	+	Routine(4)	High
Tindale (IV-C)	+	+	Refinement(1) MD(8)	High
Calston (NDN)	+/÷	+/÷	Mechanical use (1) MD(2)	Mod/high
Perry-Parkdale (NDN)	÷	+	Routine(2) Refinement(1)	Mod/high
Lido (NDN)	÷	+	Routine(1) Integration(1) MD(1)	Mod/high
Burton (NDN)	÷	÷	Routine(1) MD(3)	Moderate
Banestown (NDN)	÷	÷	Mechanical use(2) MD(1)	Moderate
Masepa (NDN)	÷	÷	Mechanical use(3) Routine(1) MD(3)	Moderate
Carson (IV-C)	÷/-	+/÷	MD	Moderate
Plummet (IV-C)	÷/-	+/÷	Refinement(2) Integration(1) MD(1)	Moderate
Dun Hollow (IV-C)	-	-	Mechanical use(2) MD(1)	Low
Proville (IV-C)	-	÷/-*	MD	Low

Legend
+ high
÷ moderate
- low
* estimate for teachers
MD missing data

---

*LoU was measured in two ways: (1) a "high-fidelity" measure that automatically gave low levels of use when the user was carrying out a version of the innovation "unacceptable" to the developer; and (2) a more relaxed version, called Practice-Related Mastery, where the measure dealt with the user's actual level of skill in using the local version of the innovation, even if it had been adapted "unacceptably". This table uses the second measure.

All data in the table come from the later implementation period.

program *un*settledness resulted from the addition of new components into the classrooms of *experienced users*, while uneven skill mastery came from the addition of *new users* to the project.

How does the survey measure of levels of innovation use (LoU) line up with our estimates of stabilization of use? At first glance, not too badly; there are no aBerrant instances. But there are lots of missing data. And we don't find a linear relationship between LoU and stabilization. We can also see some anomalies. For example, the "routine" users at Astoria were really using only a few particles of the original innovation. The same was true for Burton. At Masepa, we judged 2 of the 3 "mechanical use" teachers to be chiefly making refinements and extensions, and we thought the user judged to be "routine" was in trouble all three times we observed her. As noted earlier, these judgments may depend heavily on *which parts* of the new practice teachers were working with when observed or interviewed. Finally, users at Dun Hollow appeared to us to have so thoroughly revamped the practice that they were in the opposite situation from users at Astoria: disjointed use resulting from major refocusing. This may account for the —possibly misleading—Levels of Use assessment of "mechanical use", suggesting that users are in initial phases of use. In sum, it looks as if, minimally, a close check of components-in-use should accompany the Levels of Use measure, in order to protect its internal validity. Beyond that, it seems that a context-free index of practice mastery pays a price in intelligibility.

Stabilization of use and program continuation. Let us try to look more systematically at the relationship between stabilization of use and the prospects of continuation of the innovation. Chart 29 arrays our 12 field sites according to the extent of stabilization of use, then displays other continuation-relevant data in following columns.

Chart 29: Relationships Between User Practice Stabilization and Local Continuation

Extent of practice stabilization/Sites	1. End of project year	2. Users' attitudes to continuation[*]	3. Likelihood of continued use[*] (Same level or better)	4. Prime factors contributing to high/low likelihood of continuation
High stabilization				
ASTORIA (NDN)	1	Positive	High	Project mandated Heavy local transformation for good fit
TINDALE (IV-C)	3	Mostly positive	High	Local mandate well enforced Procedures codified User satisfaction
Moderate-high stabilization				
CALSTON (NDN)	2	Mixed[+]	Low	Budget crisis-staff cuts, reassignments
PERRY-PARKDALE (NDN)	3	Mostly positive	Uncertain	Staff turnover Uncertain funding
LIDO (NDN)	4	Mixed[+]	Uncertain	Lower administrative support Lower priority (new facility now available) Users' discouragement
Moderate Stabilization				
BURTON (NDN)	1	Positive	High	Parts of project written into curriculum Heavy local transformation, good user fit
BANESTOWN (NDN)	2	Positive	Uncertain	Budget crisis Staff reduced, reassigned
MASEPA (NDN)	3	Mixed	High	Project mandated Strong logistical support Improved pupil performance
CARSON (IV-C)	3	Mostly positive	High	Procedures codified, routinized Project mandated Widespread local support
PLUMMET (IV-C)	4	Positive	Uncertain	Likely staff turnover Lower district support
Low Stabilization				
DUN HOLLOW (IV-C)	3	Negative	Low	User + principal dissatisfaction No strong local advocate
PROVILLE (IV-C)	4	Negative	Nil	Other central office priorities; no advocate. Project discontinued User and principal dissatisfaction

[*] Researcher assessment, usually pooled from interview data and site report tables

[+] Some wanting to continue, others not.

At first glance, no sharp relationships stand out. However, the data are instructive. Let us begin with column 3, "likelihood of continued use."

In fewer than half the cases (5) is continuation likely. There are 4 "uncertain" sites and 3 low/nil ones. Overall, the picture is not rosy. It looks, in fact, worse than users anticipated; recall that users were worried about continuation at 5 sites. But it turns out that, at the remaining 2 (Dun Hollow and Proville), the project had either been phased out or was likely to be, in both cases with the blessing of local teachers. Users at Dun Hollow would have been concerned if the project _had_ been continued!

Do the high-likelihood sites have anything in common? At first blush, perhaps they are the extremes in actual practice change: Masepa, Carson and Tindale had high change in user practice, and Astoria and Burton were low. But Plummet was also a high-change site and Lido a low-change site, and both are unsure of the future. Still, we may be on to a systematic source of variance that accounts in part for continued use, although we will need the data in column 4 to see things clearly.

Are highly stabilized sites more likely to continue than poorly stabilized ones? Yes, at the extremes, but not at all in the middle range. If we set Astoria and Tindale against Dun Hollow and Proville, we have covered only a third of the sites. For the remaining sites, the data are mixed, even perhaps inverse to our expectation: moderate-high stabilization ones have high or uncertain likelihood. So we have to look further for explanations of probable continuation.

Column 2 tells us that in 7 of the 12 cases, users wanted—mostly or unequivocally—to continue. But at only 4 of these sites were their wishes likely to be fulfilled. So positive user attitudes may enhance but do not deliver a high likelihood of continuation. On the other hand, users' *not* liking the innovation looks like a slightly better predictor. At Dun Hollow and Proville, there is good evidence that teachers' disenchantment with the project did contribute to its demise, and users' weariness at Lido also mortgaged the future of that program. But mixed feelings at Masepa had no apparent effect. So teacher preferences aren't decisive, at least when it comes to insuring continued use at the site.

Nor does the longevity of a project ensure its future. Setting column 1 against column 3, we see (somewhat ominously) that the youngest innovations (Astoria and Burton) *are* assured of at least another year at the same level. while the veterans (Lido, Plummet, Proville) are either uncertain or on their way out. But the remaining sites don't line up to suggest that project length of use predicts continuation.

Now to the meatiest column (4). We have listed prime factors in rough estimated order of magnitude. Also, for the most part, these items are low-inference; they come directly from users' responses and were pooled to make a site-level judgment. What do they say about the determinants of continuation at the 12 sites?

When the likelihood of continuation is *low* or *nil* (Dun Hollow, Proville), we find two cases of dissatisfaction with the practice on the part of both principals *and* teachers, lowering building endorsement, along with absence or disappearance of an energetic local advocate. There is one case of external turbulence: budget cuts, with resulting reductions or reassignments of project staff.

When continuation is *uncertain*, we also get the external turbulence from immediate or foreboding budget cuts (2 cases), plus lower administrative support (2 cases) and staff turnover (2 cases), the latter being the result of lower funds or reduced local backing. At Banestown, there is another wrinkle. In one of the 3 schools studied, non-project staff (other teachers) found the project to be a "space-invader" and did not accommodate to it, with the tacit backing of the principal. So it seems that we can expect less continuation when most of the people doing it or administering it don't like it, when other key actors (other teachers, other central office staff) don't support it, or when there is heavy external turbulence. If we look for one overarching contributor to uncertain continuation, it would clearly be lack of sustained administrative support. When budget crises strike, central office administrators have several options, one of which is cutting a new project back or out. But there is always the option of cutting elsewhere, which, in these cases, was not exercised. Why not——especially since central office staff were usually the chief advocates of these innovations? There seem to be several reasons. These advocates had moved on to other priorities (Perry-Parkdale), had doubts about the project (Dun Hollow, Plummet), had ridden the innovation to a promotion elsewhere (Proville) or were themselves unable to reverse the course of events (Calston, Banestown). At Calston, the central office advocate was herself knocked out of the central office as a result of budget cuts. At Banestown, there was an unwritten code that special projects went first when money was short. But the central office "champion" of the project managed, via some fancy item-budgeting and reassignments, to keep the project alive at slightly below its former level of operation. So sustained central office support seems to matter.

If low likelihood of continuation is associated with low building-level endorsement, and uncertain continuation with lack of sustained administrative support, what does the support/endorsement picture look like at the 5 high-likelihood sites? Overall it looks good. Tindale users are satisfied. The project at Carson has broad-based support. People at Masepa obviously like the improved pupil performance they are getting.

Astoria and Burton introduce us to one likely reason for good building-level support: the project has been transformed to ease local constraints, thereby gaining users' endorsement in particular. At both Astoria and Burton, users got to pick and choose among the project components for the most congenial, least locally disruptive segments. Astoria users kept the testing component and threw out most everything else. Teachers at Burton picked off some supplementary exercises and materials. As we shall see in the next section when we trace the changes made in the innovation, administrators often bartered such discretionary use in return for user endorsement of the project.

At these 5 sites where continuation was highly likely, there is also more explicit evidence of administrative-level support: administrative fiat and administrative codification. The project gets mandated or otherwise literally written into local regulations and procedures. So we have direct or inferred user and administrator endorsement together with administrative fiat - an unbeatable combination of muscle and commitment. Also, when we look underneath the shroud of mandates and pressures exerted directly on users by administrators, we can see a less dramatic but probably more compelling indicator of project continuation. At Tindale, for example, new teachers were given a highly specific curriculum guide for the reading program, including worksheets and suggested units, materials, pre-tests and summative tests. At Masepa, all new teachers in the district underwent training in ECRI. At Carson, the project had an operating manual and standardized profiles and educational plan forms. There was a "community resource manual" available to present and future project staff. Two things are happening here. First, the project is getting codified and standardized, so that new users can pick up where old users left off. As a teacher at Carson put it, the project had been "routinized": it was on the way to being a part of the local landscape, a taken-for-granted fixture. Secondly, these measures are not inconsequential. Writing a project into the curriculum, fitting it into the yearly administrative and budget cycle, arranging for training for all new district staff, and taking out the practices that the innovation replaced are all steps taken to firmly *institutionalize* the project.* As a Tindale teacher put it with resignation, "it's here to stay." Undoing these measures would be cumbersome, (i.e., would call for substantial organizational and classroom changes). So we have come full circle in the innovation process, such that routinized projects become the baseline against which the "demand characteristics" of a newer practice —what it requires from the site—get measured.

Finally, it is important to point out here that we are looking at the *end* of a causal chain. That is, while administrative fiat and codification substantially determine continuation, they are themselves the product of several prior or coterminous factors. In causal terms, you have to *get to* such support in order to enhance continuation, and our chart does not tell us *how* apparently secure sites got there and insecure sites didn't. For that we need the more explanatory analysis of how stabilization of use is accomplished, which appears in Chapter VI, above with our explanations of institutionalization.

---

*This process of "routinization" as a composite indicator of institutionalization was first conceptualized and studied by Yin et al. (1978)

Conclusions

Most users at the field sites attained good practice mastery within 18 months in the complex projects and within 5-6 months in the case of the "downsized" projects. Later energies were thus channeled into refining, de-bugging and extending core components.

In this later phase, users reported a sense of achieved efficacy. By then, they spoke of being comfortable ("secure," "relaxed") with the practice, technically on top of it; of feeling confident and in control ("getting it to go my way"); and of feeling gratified by signs of success, notably pupils' responsiveness.

Users also got a more differentiated and integrated fix on the project by dint of gradually making it work consistently and predictably. Understanding the innovation meant learning what could be done with it.

For complex projects, by midway in the second year the project was easier to do, went more quickly, had predictable effects and, overall, "worked" progressively better. Most time was being spent on 6 types of task: reaching up (taking on more demanding segments), de-bugging outstanding flaws, refining and codifying, integrating these new materials into existing ones, adapting the practice to ongoing changes in the pupil population, and extending the innovation to other activities.

Later problems and concerns shifted from the self to pupils and the task, which is in keeping with other research. As one teacher said, "I was a lot more off myself and on the kids." Still, users at several sites complained of waning energy, of disenchantment and discouragement. New, more institutional concerns surfaced: the priority of the project, poor functioning of a part or the whole, lack of support from staff outside the project, worries about whether the promised results could be delivered.

It appeared that user practice mastery and/or relative settledness of the innovation did not insure project continuation. Whereas later project "stabilization" was estimated as moderate-to-high at 9 sites, in only 5 cases was the outlook good for continuation at the same level or better. The key predictors of continuation were teacher and administrative support, low environmental turbulence and clear indications that the project was getting locally "routinized" - was being built into training and budget cycles and getting codified in the form of teachers' guides and prototype materials.

CHAPTER V

TRANSFORMATIONS OVER TIME

By way of providing an advance organizer for this section, we re-display on the next page the conceptual flow chart that oriented our initial field work. For now, our focus is on the fourth column, the "cycle of transformations". The notion here, derived from psychological and sociological theory and highlighted in the recent Rand Corporation study of federally sponsored educational innovations (Berman and McLaughlin, 1974-78) is that innovations enter an environment which they change and by which they are in turn altered. As we saw in the preceding section, users, administrators and even program developers bend innovations to match local characteristics and constraints. The reshaping goes on throughout the implementation process, and varies notably with the scale or scope of the project, the degree of latitude given users to make changes and the perceived results of initial use.

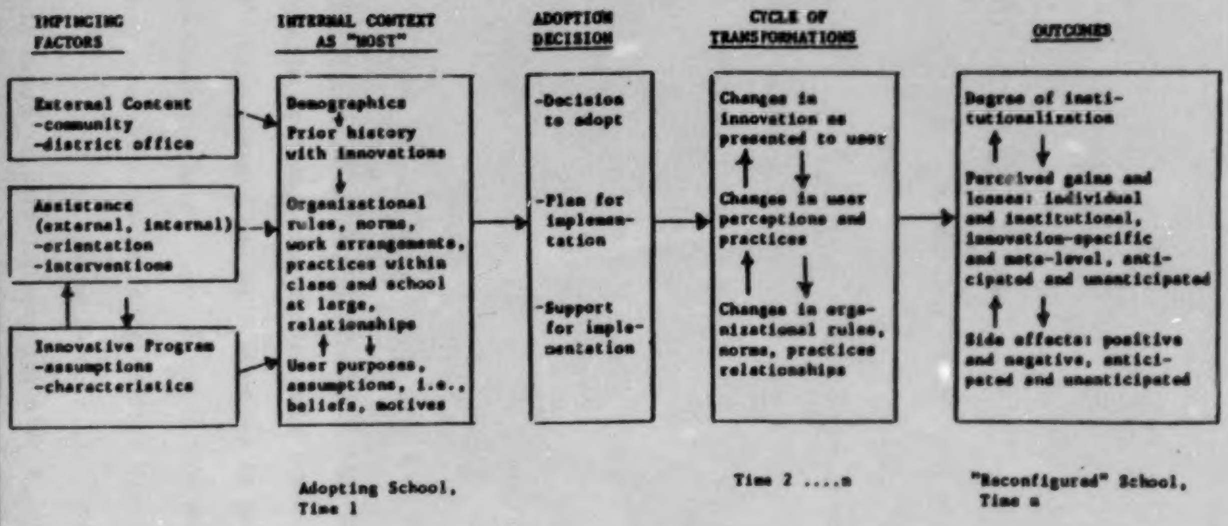
But innovations are also, by definition, carriers of practice change. A user may trim a new curriculum unit or pick selectively from it, but whatever is used will constitute a change to some degree in ongoing classroom practice. Some innovations, in fact, are heavily teacher-transforming. One project in our sample, the integrated language arts program at Masepa, fits this description. Teachers reported that they had altered their daily classroom organization, their core curriculum, their relationships with pupils and even their vision of themselves as teachers. As one teacher said, "On balance, it's a complete change from what I was doing." Most informants at Masepa said they had never dreamed their instructional repertoires and routines would be so thoroughly taken apart and reconfigured.

We repeat Fig. 1 here for convenience. It shows that the dynamics of reciprocal change also include changes in organizational rules, norms, practices and relationships. We saw innovations as changing organizations that in turn

Fig. 1(repeated)

FIELD STUDY CONCEPTUAL FLOW CHART

(Initial Version)


IMPINGING FACTORS
External Context
-community
-district office
Assistance
(external, internal)
-orientation
-interventions
Innovative Program
-assumptions
-characteristics
INTERNAL CONTEXT AS "HOST"
Demographics
Prior history with innovations
Organizational rules, norms, work arrangements, practices within class and school at large, relationships
User purposes, assumptions, i.e., beliefs, motives
ADOPTION DECISION
-Decision to adopt
-Plan for implementation
-Support for implementation
CYCLE OF TRANSFORMATIONS
Changes in innovation as presented to user
Changes in user perceptions and practices
Changes in organizational rules, norms, practices relationships
OUTCOMES
Degree of institutionalization
Perceived gains and losses: individual and institutional, innovation-specific and meta-level, anticipated and unanticipated
Side effects: positive and negative, anticipated and unanticipated
Adopting School,
Time 1
Time 2 ....n
"Reconfigured" School,
Time n

BEST COPY AVAILABLE

adapt the innovations locally. These school-level changes would also result in classroom-level changes, or themselves be the product of revisions in user practices. We take up organizational-level change in detail in a following section (pp. 277 ff.). First we examine how the innovations themselves changed.

Modifications in the Innovation

Introduction/Overview of Findings

As we survey the component parts of these innovations over the early part of their life cycle, we find a good deal of change. At the end of their third year, few bore a strong resemblance to the developer's original design; the two innovations that did remain faithful were strictly monitored by building-level administrators acting on instructions from the central office. The others underwent changes at different moments as local actors responded to situational constraints. More often than not, these changes came early and consisted of reductions of the developer's format. Some were the result of minor tinkering, but most were sea changes. As time went on, there were further reductions and a more systematic pattern of reconfiguring, which usually meant that teachers returned to segments of their standard instructional repertoire that gradually replaced parts of the new practice-as-originally-designed.

Sometimes, these changes were externally driven (as, for example, when the student population changed or a new curriculum crowded out the innovation). But more typically, they were willed by teachers and authorized by local administrators in a continuous, often implicit, process of bargaining, in which the building principal often played the intermediary between the central office and the school staff.

We found few between-program differences in the extent or pattern of change in these 12 innovations, although some of the IV-C projects appeared to be more fluid than the NDN set. The IV-C projects were new ventures which designers and users alike could variously define and refashion, whereas the NDN innovations had more structural definition, were more products than enterprises. Changes in several NDN projects also occurred earlier than at IV-C sites.

Sometimes there was variability within a given project; some users would pick at the innovation, and others would make surgical changes. But the general trend was toward collective or school-wide shifts. In some instances, the constraints on local actors were strong and uniform, and school staff decided collectively how best to respond. In other cases, the word got around that one user had made fruitful revisions and others followed suit.

There were, of course, myriad reasons why an innovation changed or remained stable, changed early or late, or changed substantially for some and little for others at a given site. We found 8 factors, all discussed earlier, that seemed to predict the extent and direction of these changes, as follows:

Goodness of fit for the user.
Degree of classroom change implied by the practice.
Degree of organizational change implied by the practice.
Goodness of organizational fit.
Severity of the innovation's local "demands".
Implementation readiness.
Scale/scope of the innovation.
Administrative latitude for making changes.

It was notably the negotiation of latitude that came just before the ebb and flow of changes in these innovations, so we tried to be attentive to the local events sparking a new round of bargaining and to the institutional preconditions for further changes.

Charting that process in the 12 field sites yielded a general "model" for early (preimplementation) changes and four distinct scenarios for later changes,each showing a different evolutionary pattern and a different mode of enacting local modifications. The four scenarios are best labelled with gerunds: overreaching, enforcing, salvaging and locally refitting.

Let us now cover this terrain more deliberately.

Type, Extent, and Significance of Changes Over Time

Chart 30, on the next two pages, assembles in one place the pattern of innovation changes (additions, reductions, reconfigurations) over time for the 12 projects, along with estimates of the extent of change (the number of components changed) and the importance of the changes (details, ancillary segments, core segments).

The best place to start is at the last two columns, where the extent, evolution and importance of local changes are estimated. If we take final estimates — at the end of three years, or at the close of data collection in sites with shorter implementation histories -- over half the sites (7) have dropped or changed from 1/3 to 2/3 of the key components to "unacceptable" versions. One fourth have such changes in more than 2/3 of the key components. The remaining two sites (Masepa, Tindale) have changed little. They are implementing "ideal" revisions of the developer's practice, and are the heavily "policed" projects we look into later.

When we set these data against the survey measures of implementation fidelity, we find that over half the survey sample showed at least an "80%" replication of the developer's ideal version of the practice, and less than a quarter of the sample fell below the 60% point.* (However, a fidelity score of .80 means only that the average component is implemented at a level not quite midway between "acceptable" and "ideal" in the developer's terms.) The distribution of Levels of Use (developer's version) of the practice also suggested lower amounts of local metamorphosis than we found in the field study. Some 45% of users were at

---

*The actual survey measures for our 12 sites fell into the same pattern, so our sites are representative of the larger sample. The issue must be one of differing approaches to measurement (see discussion in footnote, p.220).

Chart 30: Type, Evolution and Extent of Changes in the Innovation (NDN Sites)

Sponsor/ Site	Initial Implementation 6-9 Months			Second Year			Third Year			Extent and Evolution of Changes*	Importance of Changes#
	Additions	Reductions	Reconfigurations	Additions	Reductions	Reconfigurations	Additions	Reductions	Reconfigurations		
Astoria		.Fewer instructional tasks and sequences	.Shifting to pullout format		Reducing record-keeping*p Reducing staff*p	(Shifts maintained)	N/A			Moderate Throughout	Significant
Banestown		.Less diagnosing and testing .Less record-keeping no coordination	.Using longer cycles - no shifts in pupils .Taking low-ability pupils	.Reinstating earlier cuts .Adding tests, materials	Fewer		.Reinstating cuts*p .Mechanism for coordination*p	(Reduction maintained)*p		High Moderate	Moderate
Burton		.No projects elaborated .No change in teacher role .No focus on core curriculum .No use of community resources			Same pattern of use in second year*p		N/A			High Throughout	Significant
Calston		.Selective use of materials .Limited use of tests .Little student responsibility			Same pattern of use in second year*p		.Reinstatement of student responsibility*p			High Throughout	Moderate
Lido		.Selective use of activities .Few student-initiated activities .No interdisciplinarity			Same pattern of use in second year*p			.Fewer outdoor activities .Less community involvement		Low Moderate	Moderate
Masepa	.Workbooks and worksheets	.Leaving out directions .Sporadic record-keeping .No individual conferences .No small-group discussions		.More workbooks and worksheets .Group discussion	.Further cuts in directions		.Slightly more of same additions .New units in program			Low Throughout	Minor
Perry-Parkdale	.Basic skills activities and materials .Logs, time sheets	.Discarding key instrument .Limited parental involvement .Less student responsibility		.Passes for students .More competency and skill emphasis	."Batching" -less individualization .Fewer job-related activities .Dropping parent advisory board	.New, lower-achieving student population	Intensifying of 2nd year changes			Low Moderate	Moderate

Blank cells = no changes (initial implementation)
= no further changes (later implementation)

*low = less than 1/3 of key components
mod = 1/3 to 2/3 of key components
high = greater than 2/3 of key components

} shifting into "unacceptable" or "absent" category

# Researcher's estimate
p = data from site feedback on researcher's predictions

BEST COPY AVAILABLE

Chart 30 (cont'd): Type, Evolution and Extent of Changes in the Innovation (IV-C Sites)

Sponsor/ Site	Initial Implementation 6-9 Months			Second Year			Third Year			Extent and Evolution of Changes*	Importance of Changes#p
	Additions	Reductions	Reconfigurations	Additions	Reductions	Reconfigurations	Additions	Reductions	Reconfigurations		
IV-C Carson	Full-Scale Implementation (by volunteers)			.More testing .More centralization .Adding staff (aide) .Adding in-service training	.Fewer conferences .Fewer meetings .Less use of community	.Simplification of educ. plans .Using existing mechanisms (parent meetings)	.Program mandated for all	.Less monitoring .Educ. plans more desultory .Fewer meetings, conferences .Evaluations incomplete .In-service incomplete	."Batching" of students	Low Moderate	Significant
Dun Hollow	.More lessons, activities, materials			.Still more instructional supplements, e.p. vocabulary cards and sentences			.Supplementary pictures	.Not using approved resource people	.Rearranging instructional sequences (to make them more logical)	Low Moderate	Minor
Plummet		.Lowered academic content		.More staff .More counseling .More teaming	.Dropping conventional curricula	.Organizing program	same trend continued 2nd year			Low High	Significant
Proville		.Simplified student selection .Not recruiting staff .No trainings .Poor student-job match .Deleting jobs		.Partial reinstatement of 1st year reductions			.Further reinstatement of 1st year reductions			High Moderate	Significant
Tindale		.Leaving out small sections of units .Selective use of materials .Uneven testing		.Partial reinstatement of 1st year reductions	.More widespread discarding of small sections .Elimination of one unit	.Shifting sequences			.More widespread shifts in sequences	Low Throughout	Minor

Blank cells = no changes (initial implementation)
= no further changes (later implementation)

*low = less than 1/3 of key components
mod = 1/3 to 2/3 of key components
high = greater than 2/3 of key components
} shifting into "unacceptable" or "absent" category

# Researcher's estimate
p = data from site feedback on researcher's predictions

BEST COPY AVAILABLE

the "mechanical use" stage or better, with the bulk of these (36%) at the level of "routine use". Finally, the survey only identified 14%-20% of the sample who had significantly deviated from the developer's version.

The field study seems to be picking up more numerous and more consequential changes. We also saw more attrition with time; of the 7 sites with shifts from initial implementation to later use, 5 of these entail reductions in the number of acceptable components. The remaining 2 (Banestown and Proville) began with substantial reductions, then gradually restored some core components as school staff got more on top of the new practice.*

---

*These differences deserve some careful explanation, because the concept of fidelity and its shadow inverse, "adaptation" are very central in any effort to understand educational innovation. "Fidelity" proponents assert that distorted innovations will not have their expected impact; analysts emphasizing local adaptation (Mann, 1978) point out that only practices that have been fitted to the demands of the local site can be expected to work. Here are our explanations:

1. The field study was originally interested in the topic of innovation"transformation", and the survey in "fidelity"; these conceptual differences drove data collection and analysis.
2. The field study collected data from more different users than did the survey, in some cases from several buildings, thus emphasizing a wider range of changes in the innovation.
3. The field study looked at innovation changes occurring from before implementation through several months after the survey data collection, a period often lasting 2-3 years; more changes were picked up than through the survey's one-time "snapshot". The survey did not measure back-and-forth changes that might have occurred in a single user's work with the innovation, only present use.
4. The field study aggregated user findings into a site-level judgment of changes in the innovation, while the survey made only individual judgments. The aggregation, because a wider range was seen, tended toward higher mean changes.
5. The field study used the survey's configuration checklist (sometimes with researcher additions) to define the innovation's components, and the developer's version of what was "acceptable", "unacceptable", and "ideal." However, it did not average components, as the survey did. Several "unacceptable" components in the survey data could easily be "cancelled out" by several "ideal" components, resulting in a general score of "acceptable".

In short, the approaches of the two studies were not commensurable. Did the survey validly find that "fidelity" was moderately high in the typical site? Yes, within the constraints of their methods. Did the field study validly find that "transformation" had occurred in the innovations? Yes, within the constraints of their methods.

For a more specific comparison of data from the two approaches, see Appendix K.

The final column in Chart 30 is more speculative. If we just count numbers of components that move from "acceptable" to "unacceptable" levels of orthodoxy, we may be mixing trivial and momentous units. On some projects, a "key component" such as "teacher visits students in detention" has the same checklist weighting as "special education teacher teams with regular teacher to develop, update and implement individualized educational plans" (Plummet). We tried to determine whether the changes made were minor (like the detention visits), of secondary importance (e.g., "uses program in the morning for 20-60 minutes" - Banestown site) or were substantial, entailing changes in core components or basic purposes. Reading across the row for the Burton (NDN) and Carson (IV-C) sites gives a good image of what significant changes look like over three years. As one of the users said during the third year of implementation at Carson, "The program as I saw it originally is over". For contrast, scan the rows for Masepa (NDN) and Dun Hollow (IV-C) to get a feeling for sites making only minor modifications.

Our analysis shows 5 sites with "significant" changes, 4 with "moderate" changes and 3 with "minor" changes - again, a picture of more-substantial local adaptation than suggested by the survey data. By way of anticipating the scenarios we will recount later, here is a thumbnail sketch of what happened at the 5 sites with farther-reaching changes:

Astoria (NDN):	The program, poorly fitted to ongoing grade level and classroom organization, was converted to a pullout format staffed by aides and parent volunteers.
Burton (NDN):	The project called for wide-ranging changes in instructional formats, levels of pupil responsibility and out-of-school contacts that school staff were unable or unwilling to make. With administrative permission, they ignored components asking for such change.
Carson (IV-C):	The individualized education project made heavy demands on staff time, available resources and record-keeping; it was progressively stripped down and simplified, with much of the individualization lost.

Plummet (IV-C): The initial project had to be massively revamped through curricular and instructional changes to accommodate the incoming student population.

Proville (IV-C): Very little was done to follow through on the initial design; only a skeleton program was executed, then discontinued.

Even the projects making what we estimated to be "moderate" changes turned out with reductions or reconfigurations in core components. For example, one of the major objectives at the Calston (NDN) site was to enhance pupils' appreciation and mastery of literature. By the third year, at least one of the three remaining teachers was using the literature segments of the program only as "rewards" for good behavior. At Banestown (NDN), the program called for the selection of underachieving pupils with grade-level aptitudes, to come to a pullout lab in 3-5 week cycles. But about a third of the pupils were at sub-95 I.Q. levels and all stayed in the lab a full year.

From a strictly local perspective, all these changes - including significant ones - were logical, if not inevitable. At their best, they took account of local characteristics and constraints, sometimes prolonged the life of the program, and provided better access to funds and materials and increased administrative support.

At their worst, the changes flowed from teacher or administrative resistance that was poorly founded, or from simple convenience. In some cases the moderate to high changes were productive, enhancing the innovation's impact on students (Plummet, Banestown, Perry-Parkdale). But in others, a moderate to high degree of change closed out the possibility of student impact (Burton, Proville). In two "well-policed" sites with minor changes (Masepa, Tindale) impact was high; at the third (Dun Hollow) minor changes were irrelevant to the impact of a poorly-designed, resisted program.

In short, neither "fidelity" or "adaptation" necessarily makes for student impact. The question is whether a program is well-designed in the first place---and whether adaptations made strengthen or weaken that design.

Chart 30 also gives a synopsis of the type of modifications made over time. Just squinting at the chart is instructive. There is a lot of print in the "reductions" cells of the NDN projects during initial implementation, then more white space later on. This suggests heavy cuts at the start, most of which are maintained or intensified over time (Astoria, Burton, Lido, Perry-Parkdale). The remaining 3 projects (Banestown, Calston, Masepa) appear to have gone through a shakedown cycle, then restored some of the initial design characteristics. So contrary to much theory and some conventional wisdom about the timing of change, the bulk of local NDN sites in our sample are making major changes before or at the start of program execution, then settling into a substantially reduced format with some later restorations.

A IV-C squint yields a slightly different set of patches, although we only have 5 projects to survey. Proville aside, there are few initial reductions of any importance—a natural result of the developmental nature of IV-C grants. By the second year, however, there is some heavy remodeling at Carson, Plummet, and allowing for the difference in scale, at Dun Hollow. Proville appears to be getting on its feet by making partial restorations. Overall, these sites seem to make more swings and lurches than the NDN sites, whose progression is more linear. As a set, the IV-C projects have less definition; they are often more shadowy to users who have an unclear idea at the outset of what the project entails, beyond a general concept.*

---

*This is also true of NDN projects, but to a lesser extent, and for different reasons. The "outsideness" of NDN projects can make for user unclarity and confusion, as we have already seen---even though the project is a well-defined package.

IV-C site personnel discover and shape the project as it unfolds to a greater degree than do NDN personnel - who, reacting to a more clearly-defined product, often pick and choose segments to fit their instructional or organizational styles. But there is still a high modification rate in 3 of the 5 IV-C innovations in relation to the original design. A final "squint analysis" tells us that IV-C projects have slightly more, and later, reconfigurations than NDN innovations. The maverick IV-C case is Tindale, which began with a tight, well-designed product whose faithful execution was consistently enforced at the two target schools.

The most common form of reconfiguration across innovations appears to be organizational in nature: changing program formats (Astoria, Plummet); revising program cycles and record-keeping procedures (Banestown, Carson); shifting pupil selection (Banestown, Perry-Parkdale). When the project is more classroom-contained, there are shifts in instructional resequencing (Dun Hollow, Tindale). But sometimes,reconfigurations are simply the product of additions mixed with reductions. For example, at the Masepa site teachers began - first tentatively, then more brazenly - to discard segments of the new, highly regimented, comprehensive language arts program which they replaced with some of the materials and activities that the innovation was meant to supplant. When this happened, teachers at Masepa gave one of the following reasons:

Reducing	1. Lack of time to carry out the program as designed. 2. Need to unload materials judged to be boring or inappropriate in class. 3. Incompatibility of program segments with one's own instructional style. 4: Deletion of components felt to be overly taxing.
Adding	5. Supplementing the program where it was judged to be thin. 6. Putting back in activities or materials that teachers enjoy working with or have "worked for me" in the past.

Changes at the other sites with classroom-contained innovations (Burton, Calston, Lido, Dun Hollow, Tindale) were similarly justified. To give a more concrete sense of why these kinds of changes were made, here are some excerpts from Masepa interviews:

1. Reductions for lack of time

> There have to be short cuts... There are just too many things to do to be able to do them all at once... We let the girls ease into it (Local trainer).

2. Deletion of boring or inappropriate segments

> Those kids hated it. They got so sick of the same directives over and over again. The next year I stopped following all those steps. Everyone around here is cutting corners... They would have revolted if I hadn't cut it down. We started to have more fun (6th grade teacher).

3. Deletion of uncongenial segments

> I can't imagine doing that (write-a-story) stuff every day. I'd go crazy...(and) I don't go in for all that record-keeping stuff (2nd grade teacher).

4. Deletion of overtaxing segments

> Can you imagine? Correcting 27 stories a day!...And all those timed practice trials! Why do they have to read it 3 times and time themselves? (5th-6th grade teacher).

5. Addition of "needed" components

> There are a lot of things you don't get in... I've had to add worksheets on adverbs, adjectives and parts of speech. There's a lot that had to [illegible] added for me to be happy with it (6th grade teacher).

6. Addition of strong or enjoyable units

> I have an individualized reading program that I'm going to stick into this. I've been hesitating, but now I'm going to do it (6th grade teacher).

Factors Inducing Changes in the Innovation

Typically, the 12 innovations were not modified simply because local users wanted to, nor was goodness of personal fit the only or most salient reason. For one thing, teachers only made *substantial* changes when they were authorized to do so, which was not always the case. For another, recall our earlier remark that program reconfiguration was sometimes the result of *structural incompatibility*; working arrangements and regulations could not accommodate to the innovation and so the innovation accommodated to them. In trying to get a census of all the factors operating at the classroom and school levels to induce modifications in the innovation-as-originally-designed, we found 8 main "predictors" of change. Our list excludes what was sometimes a major contributing factor: external events over which local actors had virtually no control, such as staff turnover or budget cuts. It's useful to note that in three high-turbulent sites (Banestown, Calston, Perry-Parkdale) innovation changes were only moderate; only in Plummet was there high turbulence and high innovation change, and the causal connection there was weak.

Chart 31 shows the status of 5 of these 8 change-inducing factors, with the 12 sites arrayed by relative significance of change (the final column in Chart 30). We have already examined the first four factors in our review of the adoption process: the fifth requires a brief introduction.

Demand characteristics. In order to be implemented as designed, innovations make a number of demands on local settings. These can be logistical (provision for transportation), normative (more student responsibility), structural (redeployment of staff, curricular revisions), or political (support from central office staff or school board members). They may exert pressure at one or several levels: at the community level (multiplying contacts with, providing resources to schools), at the district level (changing regulations or evaluation procedures), at the school building level (reassigning pupils and staff) and, obviously, at the classroom level. There can be up-front demands that need to be met before the program can be executed, and later demands when some features of the innovation clash with local practices and norms. Demands can be major or minor; they can require additional resources (in staff or materials), or re-allocated resources from existing programs. (To illustrate the practical meaning of demand characteristics, Chart 32 arrays them in terms of program requirements and their implications at different levels, for the Masepa site.)

All too often, it seemed to us that before setting out local teachers and administrators had not made a thorough diagnosis of the demands implied in the adoption of a new program. They saw some problems and reacted to them with changes, but missed many others. Maybe this was salutary; some sites might not have gone ahead had they looked too closely at the structural and normative implications. But there was inevitably a day of reckoning when programs came face to face with major local constraints. We have already seen that NDN sites seemed to do much of their reckoning earlier than IV-C sites.

Demand characteristics are often the product of the relationship between organizational fit and implied organizational and classroom change. For instance, we can interpret the row entries for the Astoria and Burton sites in Chart 31 to mean that the innovation made strong demands in terms of changes required at the organizational and classroom levels. Site personnel were unable or unwilling to meet these demands, and, as a result, bent the innovation substantially to fit existing practices.

Chart 31: Effect of 5 Predictors on Changes in the Innovation

Change Sites	User Fit*	Anticipated Classroom Change*	Anticipated Organizational Change*	Organizational Fit**	Demand Characteristics**
Significant Changes					
Astoria (NDN)	Good	High	High	Poor	Strong
Burton (NDN)	Fair	High	High	Poor	Strong
Carson (IV-C)	Fair-Good	High	High	Fair-Good	Mod-Strong
Plummet (IV-C)	Good	High	High	Good	Strong
Proville (IV-C)	Good	Low[+]	Moderate	Fair	Moderate
Moderate Changes					
Banestown (NDN)	Good	Low	Low-Moderate	Good-Fair	Small-Mod
Calston (NDN)	Good	Mod	Low	Good	Small-Mod
Lido (NDN)	Fair	Mod	Low	Good	Small-Mod
Perry-Parkdale (NDN)	Fair-Good	Low[+]	Moderate	Good	Mod-Strong
Minor Changes					
Masepa (NDN)	Fair-Poor	High	Moderate	Fair	Mod-Strong
Dun Hollow (IV-C)	Poor	Low	Low	Good	Small-Mod
Tindale (IV-C)	Fair	Mod	Low	Good	Moderate

*From informants' responses

**Researcher's estimates

+Program with few classroom-level components

___=strong predictor of ensuing changes

Chart 32: Program Requirements and Implications for Implementation (Masepa Site)

Level	Requirements of the Program	Implications
Community (parents)	-integrated language arts -no normative or letter grade evaluation (report cards)	habituation to new curriculum and grading procedures
District	major initial investment (training, materials) blocked (full morning) timetable	strong initial commitment required reorganization of timetable for phys. ed., music
Building		
Administrative level	cross-age, cross-skill grouping of pupils	reassignment of pupils during morning periods
Classroom level	elimination of teacher's manual and worksheet	teachers must choose, assemble or construct their own materials for reading, composition, grammar
	prescriptiveness - identity of treatment in classrooms	teachers can be compared more easily; less time for group activities, individual teacher initiative
	elaborative record-keeping	time-consuming; teachers can be more easily monitored by administrators
	integrated language arts	no separate periods for reading, spelling, grammar, composition
	decentralized classroom organization	teachers must manage 2-3 simultaneous activities
	ability-grouping and individualization	eliminate collective instruction; wider variation in individual tasks and performances

This is essentially what happened at Astoria and Burton, and Chart 30 tells us that it happened early. Another example is Perry-Parkdale, where moderate-to-strong demand characteristics implied non-trivial organizational changes (ex: coordinating schedules, lowering pupil supervision, cooperating with the community, pulling pupils from academic activities), making for an imperfect organizational fit that was not at first visible but later reduced the scope and innovative bite of the career education program there.

Does any one of the 5 factors in Chart 31 strongly predict ensuing changes in the innovation? Demand characteristics are strong for significantly altered projects, but not weak for projects making minor changes. Organizational fit is poor for two of the high-change projects and fair-to-good for all those in other categories, but there is no perceptible covariation. Poorness of organizational fit was judged a strong predictor at Astoria, where a highly individualized kindergarten-level diagnostic and remedial skills program was to be inserted in a first-grade class of high-achieving pupils with a pupil-teacher ratio of 35:1 -- a near-total mismarriage, and one that led to divorce as the program was largely converted to a pull-out format staffed by aides and parent volunteers. At Banestown, the remedial skills project depended heavily on close lab-classroom coordination that was neither an acceptable norm nor an organizational option in the first year of implementation. Later, coordination was requested and instituted - a good example of how innovations can induce changes in institutional climates and working arrangements.

If we lump projects making moderate and minor changes and contrast them with high-change projects, the degree of anticipated organizational change looks like a good predictor, covarying nicely. It's as if the innovation gets altered - usually reduced - when the discrepancy is too great. Astoria was a good example of immediate alteration. At the four other sites for which this factor is underlined as a strong predictor, there was a sleeper effect: discrepancies surfaced during program execution and either led to on-the-spot program changes (Banestown, Plummet) or gradually wore down protagonists at the site who began to simplify, routinize, and depersonalize the more energy-consuming components of the new practice (Perry-Parkdale, Carson). Much of that energy had been consumed, of course, in maintaining the discrepancy between customary organizational practices and the procedures used in the new practice. For example, here is a review of the reduction in energy investment at the Carson (IV-C) site, where a highly individualized instructional project was implemented:

> It was not just that individual teachers spent less time (a half or a third, as much as before, some said) with individual students, but that home visits were eliminated, conferences were reduced in number, there was a tendency to encourage "batch"-type activities planned and executed by the coordinator, the high school program shifted toward course advising with fewer individual activities and trips, and questionnaires (a means, supposedly, of improving and steering the program) were typically not filled out by 20-30% of teachers ("too many questionnaires"). And there was regular griping about the forms for the program itself:
>
>> When it comes to bookwork, let me teach. I'm not a secretary. (Teacher, Carson)

When programs with few classroom-level components are deleted from Chart 31, the degree of implied classroom-level change clearly distinguishes programs that were significantly altered from the others. All things equal elsewhere, when the demands of the program promise classroom transformation, the program gets changed substantially. A good example is the Burton (NDN) site, where teachers doing the IPLE curriculum faithfully would be required to conduct simulations and theme-centered projects, arrange for short internships in the community and bring external resource people into the classrooms. This wasn't what most of the teachers either had in mind or felt comfortable with. Their interest was in extracting from the program short, easily organized and "fun" fragments to enliven the conventional lecture and discussion formats they liked and did well. Duly authorized, this is what most did.

But note in Chart 31 that levels of implied classroom-level change are not uniformly low for slightly-changing innovations, so the relationship is, at best, partial. This set of innovations does diverge from the others, however, in goodness of user fit, which is uniformly fair-to-poor. (A site-level estimate of "fair" fit usually meant that some teachers felt the innovation "fit me like a glove", while others said they were "being violated" in the ways they would have to work with and relate to pupils.) We judged poorness of user fit to be a strong catalyst for local changes in these three projects, although such alterations were minor. For significantly or moderately-changing innovations, the fit was either more congenial or, if not, had little effect on the degree of program change.

Chart 31 only tells part of the story. The remainder is shown in Chart 33, where we find the final 3 predictors of program change. Only one of these (implementation readiness) has been discussed earlier. Beginning with this predictor, there is a slight trend for unready projects to make significant changes and—looking back at Chart 30—to make them early, as we would predict. But the remaining cases do not fall into line; some high-change sites were ready (Astoria, Burton) and no low-change site was fully prepared at the start. There is strong evidence, however, that at three of the higher-change sites (Plummet, Proville and Banestown) the program was full of bugs from the start and that this led to fairly drastic shifts in the characteristics of the program that was executed. In two cases (Proville, Banestown), the nature of the program change was that little of it was executed because little was ready to be executed. In the third (Plummet), far too little thought had been given to the characteristics of the incoming pupils, for whom the initial program design proved quite inappropriate.

Administrative latitude refers to the degrees of freedom given to users for making discretionary program changes. Note that such latitude was typically high, especially for high-change projects. Note also that the two low-latitude sites experienced only minor changes in the innovation, so we have the rudiments of a linear relationship: more license to change produces more change, less produces less. Note next that we have more underlines here than in any other column in Charts 31 and 33, which suggests that latitude was a decisive predictor of program change. And note finally that, in 6 of the 8 cases where administrative latitude is judged a strong predictor, we are at NDN sites. We saw earlier that NDN sites were places where changes in the program were often made early, either before program execution or in the first months. What seems to be happening is that administrators are giving early and wide latitude to users who are asking for it - possibly as a pre-condition to use in their classrooms. This was in fact the scenario at four of the NDN sites where administrative latitude was deemed important: Astoria, Burton, Lido, and to a lesser extent, Perry-Parkdale, where local developers bargained with building administrators. Users spoke freely of these

Chart 33: Effects of Readiness, Latitude and Scope on Changes in Innovations

	Implementation Readiness**	Administrative Latitude**	Initial(pre-implementation) Scale-Scope of Innovation**
Significant Changes			
Astoria (NDN)	Adequate	Low/High@	Large
Burton (NDN)	Adequate	High	Small-Moderate
Carson (IV-C)	Adequate-Partial	High	Large
Plummet (IV-C)	Partial-Inadequate	High	Large
Proville (IV-C)	Inadequate	High	Moderate
Moderate Changes			
Banestown (NDN)	Inadequate	High	Small-Moderate
Calston (NDN)	Adequate-Partial	Moderate	Small
Lido (NDN)	Adequate-Partial	High	Small-Moderate
Perry-Parkdale (NDN)	Partial-Adequate	High	Moderate
Minor Changes			
Masepa (NDN)	Inadequate	Low	Large
Dun Hollow (IV-C)	Partial-Adequate	Moderate	Small
Tindale (NDN)	Partial-Adequate	Low	Moderate-Large

**Researcher's estimates from checklist

@Low for central office, high for building principal

___Strong predictor for ensuing changes

local agreements, sometimes invoking professional prerogatives. Some examples:

> The basic philosophy is there, but the use of KARE is flexible and doesn't require use of all units. Those were the terms of our adaptive grant; we wouldn't have done it otherwise (teacher at Lido).
>
> (One teacher) had a strong interest in expanding his own program through IPLE activities and approaches. The other 3 users...were presented with the training and materials in the fall and told that they could use them as they wished. (The central office administrator) referred to this year as one of experimentation and next year of institutionalization (site report for Burton).

These excerpts introduce two new wrinkles. The Lido case points to a bargaining daisy chain from developers to central office administrators to building-level personnel. Developers give a license to modify the innovation, possibly as a means of obtaining local adoption, possibly also to strengthen the project by promoting local adaptations. Such deals were struck at 4 of the sites (Burton, Calston, Lido and Perry-Parkdale), as a pre-condition for adoption.

The excerpt from the Burton case report suggests a local strategy of administrative latitude whereby first-year users get a license to modify a "pilot" innovation which will be subsequently revoked when the project gets written into the curriculum. This happened at Burton, although only fragments of the original program were in fact institutionalized. There was a similar, somewhat more restricted license given to teachers at Dun Hollow, but the project was dropped at the end of the pilot phase.

Chart 33 shows two other profiles of administrative latitude. First, Masepa and Tindale are low-latitude sites. Administrators at the central office and building levels ran very tight ships. From a Tindale teacher:

> We *had* to succeed because the program wasn't leaving. If it didn't work, the people would have to leave instead. *We* were supposed to change.

And from a Tindale building-level administrator (dep't chairman):

> If you want to depart from the guide, ask me and also tell me why you want to do it and how it will fulfill the guide's objectives. We (she and the dep't chairman at the other adopting school) mostly decide "no" before teachers even ask to make changes.

The rationale at both sites was that (a) the program was designed to be effective and (b) to get a fair trial, it had to be run faithfully. Later, when weaknesses or problems could be unequivocally pinned down, more latitude could be given to enable intelligent change.

But this didn't stop teachers from making surreptitious changes during the early years of implementation. At Tindale, there was fairly widespread collusion:

> You're doing A, I'm doing B, let's not tell anyone. Let's cover up (English teacher).

At Masepa as well:

> I see teachers using textbooks all the time. Workbooks too...They just don't talk about it much (1st grade teacher, non-user of the project).

Some teachers camouflaged the changes they made in the innovations:

> She added that if the English department chairman happened to walk into her classroom...she was always prepared to shift back to what's in the curriculum and can "sing and dance" if necessary (Tindale site report).

Others dug in their heels:

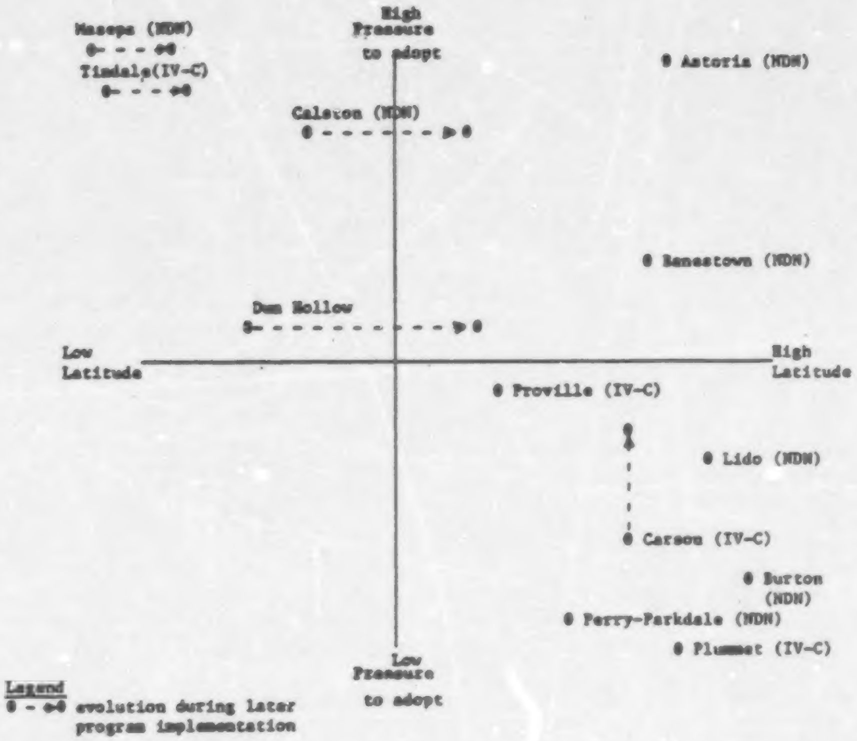
> In this program you're like a robot. But I learned that if I wanted to change something I would just go ahead and do it. After a while I saw that a lot of it was hogwash. I learned to cut corners and do it just as well (6th grade teacher at Masepa).

Finally, at Astoria, there was a slightly convoluted pattern of administrative latitude. The central office administrator demanded, but did not monitor, orthodox program execution. The vice-principal who was responsible for the classrooms involved not only authorized but actually designed the far-reaching modifications that made it possible to use the program locally. There is some (though weak) evidence that the two administrators agreed tacitly on this procedure.

We have been presenting "latitude" for most of our sites as a bargain struck explicitly or implicitly to avoid jeopardizing adoption and implementation. There is another plausible hypothesis: perhaps administrators allowed users to modify project characteristics as a sort of palliative after having constrained them to adopt it. Recall earlier (p.68) that pressure was the chief motive for adoption for about half the users. If this hypothesis were valid, we would find a strong relationship between levels of pressure to adopt and latitude.

Figure 7 plots that relationship. We have three clusters: low latitude/high pressure (Masepa, Tindale, Calston, possibly Dun Hollow), high latitude/high pressure (Astoria, Banestown) and high latitude/low pressure (the projects in the lower right quadrant). For the high-pressure sites, latitude increases over time when initial latitude is low (note arrows).

Fig. 7: Relationship of Pressure to Adopt and Degree of Latitude Given to Users at 12 Sites



Our hypothesis at first glance doesn't pan out; only Astoria and, to a lesser extent, Banestown have strong-arming to adopt associated with latitude to change. When we look more closely into these 2 cases, only at Astoria was there an explicit "payoff" of the kind we were hypothesizing. In fact, the overall plot seems to say that, at least initially, high pressure sites allow little latitude and low-pressure sites allow a lot of latitude.

But there are lighter-handed or more liberal forms of pressure. At Astoria, administrators (in this instance, the vice-principal) are saying something like this to users: "You have to do it, but first you can change it substantially". At 6 of the remaining 11 sites, the message (usually from administrators to teachers) is this:

> "I'd like you to do this, at least on a trial basis. You can pick and choose or reconfigure it whenever you find it necessary." (Banestown, Burton, Lido)

or this:

> "You're going to do this. Start out doing it like the developer wants. Later, you can make changes." (Dun Hollow, Calston, Masepa, Tindale)

What about the other 4 sites? Three had the convictions of a minor crusade. Administrators were saying to teachers something like this:

> "Let's dive into this together and de-bug it as we go." (Carson, Perry-Parkdale, Plummet)

Finally, at Proville, there was a message from the central office to principals like this:

> "We want to try this and we want at least token collaboration from you."

So there is some support, though it appears in non-blatant, smoothed-down form, for our guess that administrative latitude is in part the quid for the quo of adoption decisions made and handed down from administrators to users.

Now back to the last column of Chart 33. Scale and scope of the innovation affected the extent of local changes in the program, but seldom stood alone as a strong predictor. For example, at Astoria it was the combination of large scale, poor organizational fit, extent of building- and classroom-level change, and high administrative latitude that led to program modifications. Large-scale, organizationally-demanding projects with less than adequate readiness brought on substantial change in the innovation (Carson, Plummet). Conversely, the smallest-scale, relatively undemanding classroom-level project (Dun Hollow) changed little because there was effectively very little to change.

A General Model and 4 Scripts

This succession of tables and charts has allowed us to tease out micro-level contrasts and clusters as we moved successively across the eight predictors of change in the innovation. We now move to piece these fragments together.

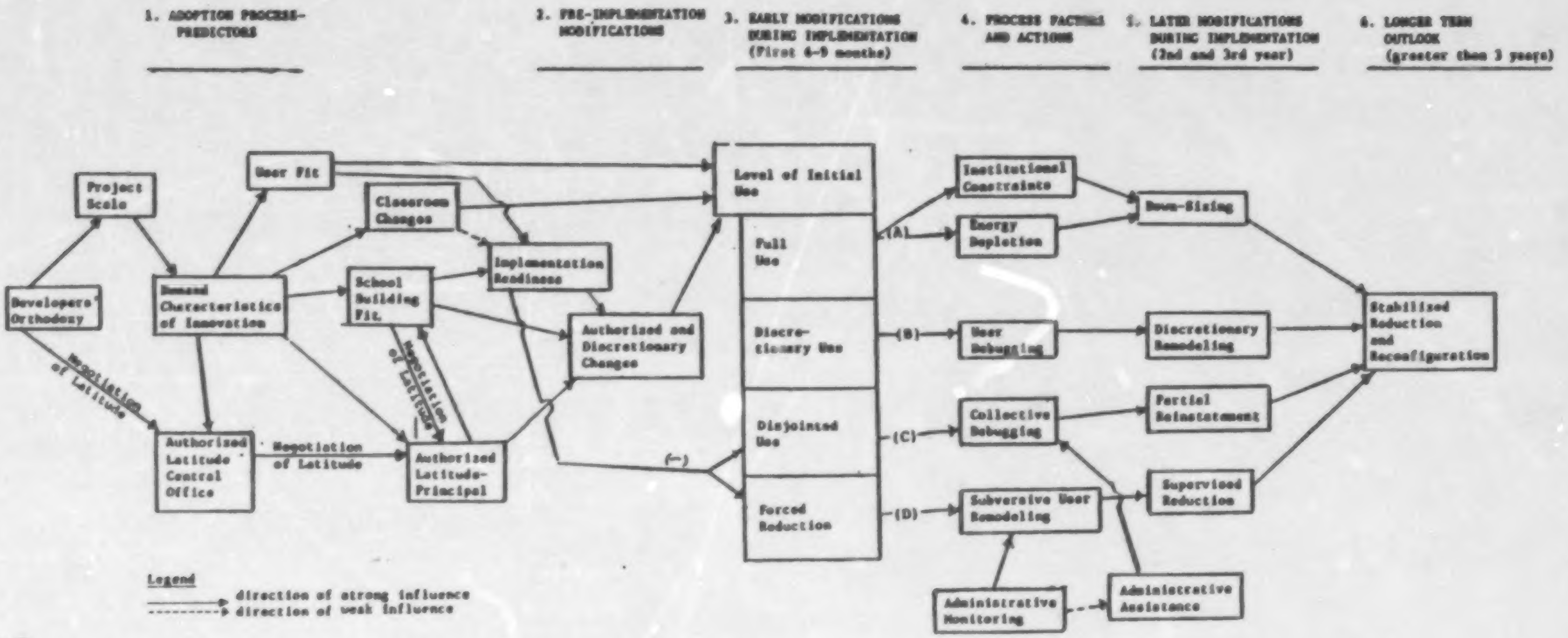
Figure 8 is a cut at an integrated explanation. It looks at first like a forbidding maze of boxes and arrows, but turns out to be simple enough if we read progressively across it. The column headings across the top take us through the adoption process (column 1) to early, then later program execution. The second column heading corresponds to the point of initial change — before implementation is underway. Then, with column 3, early implementation, we see the next wave of changes. Looking down column 3, there are four patterns of early implementation. At this point begin the four scenarios, labeled A through D. Each is shown separately as a horizontal progression ending at a common (modal) outcome for the 12 sites. Before we walk through the model, here are the four scenarios and the sites involved.

Scenario	Progression of innovation changes (from Chart 30, Col. 10)	Sites
(A) Overreaching	low→moderate-high	Carson (IV-C), Perry-Parkdale (NDN), Plummet (IV-C)
(B) Locally refitting	high throughout* low→moderate	Burton (NDN), Calston (NDN) Dun Hollow (IV-C), Lido (NDN)
(C) Salvaging	high→moderate	Banestown (NDN), Proville (IV-C)
(D) Enforcing	low throughout	Masepa (NDN), Tindale (IV-C)

---

*Remember that this indicates that a high number of initial changes was maintained throughout the period we studied.

Fig. 8: Model of the Process of Innovation Change


1. ADOPTION PROCESS-PREDICTORS
2. PRE-IMPLEMENTATION MODIFICATIONS
3. EARLY MODIFICATIONS DURING IMPLEMENTATION (First 6-9 months)
4. PROCESS FACTORS AND ACTIONS
5. LATER MODIFICATIONS DURING IMPLEMENTATION (2nd and 3rd year)
6. LONGER TERM OUTLOOK (greater than 3 years)
Project Scale
User Fit
Classroom Changes
Developers' Orthodoxy
Demand Characteristics of Innovation
School Building Fit
Implementation Readiness
Negotiation of Latitude
Negotiation of Latitude
Authorized Latitude Central Office
Negotiation of Latitude
Authorized Latitude-Principal
Authorized and Discretionary Changes
(—)
Level of Initial Use
Full Use
Discretionary Use
Disjointed Use
Forced Reduction
(A)
(B)
(C)
(D)
Institutional Constraints
Energy Depletion
User Debugging
Collective Debugging
Subversive User Remodeling
Administrative Monitoring
Administrative Assistance
Down-Sizing
Discretionary Remodeling
Partial Reinstatement
Supervised Reduction
Stabilized Reduction and Reconfiguration
Legend
direction of strong influence
direction of weak influence

Legend of 'scenarios'
(A) Overreaching: Carson, Perry-Parkdale, Plummet
(B) Locally refitting: Burton, Calston, Dun Hollow, Lido
(C) Salvaging: Banestown, Proville
(D) Enforcing: Masepa, Tindale

This grouping is different from earlier ones. It focuses on what people at the sites are doing to the innovations, not on the magnitude of changes made. Note also that a site is missing. Astoria doesn't fit conveniently into any family. Its script might best be called "surreptitious reconfiguring", virtually all of it done at the pre-implementation stage.

To run through the schema, we start at the adoption process. The path leading across the bottom set of boxes in column 1 is, as we saw in Chart 33, a decisive one. Some developers insisted on orthodoxy (ex: Masepa, Tindale), which usually led to a decision in the central office to allow little local latitude. The principals passed on the order to teachers. There was some allowance for minor changes owing to burdensome demands that could not be met (e.g., eliminating grades) and to especially poor fit at the building level (e.g., time constraints from other commitments). On the other hand, when developers negotiated liberally over components that could be locally dropped or altered (e.g., Burton, Lido, Perry-Parkdale), there was greater latitude given first by the central office, then by building administrators. In this second type of situation, innovations were molded - usually by reducing their scope - to fit local characteristics. Perceived demands, teacher preferences, complications at the classroom and building levels all led to a winnowing down of the project. Sometimes administrators and teachers negotiated amounts and types of authorized changes (e.g., Banestown, Calston); sometimes teachers got outright discretionary authorization to make changes (e.g., Burton, Dun Hollow). If classroom fit was poor and/or teachers felt unready, they began to implement selectively the components they liked, felt on top of and could integrate into their standard repertoires. In a few cases, there was virtually no discernible negotiation phase (e.g., Carson, Plummet, Proville - all IV-C sites -) and something of a rush into full program execution which, when readiness was low, got the project into difficulty (Plummet, Proville), or even when readiness was stronger (Carson) slowed implementation somewhat.

As the schema shows, changes in the innovation could come at two points, either prior to execution (col 2: the arrows leading to authorized and discretionary change) or during early implementation (col. 3: the arrows leading from the predictors directly to levels of initial use). Sometimes there were changes at both points, especially when administrative latitude was high. At Calston, for instance, there was first a cascade of negotiations between the innovation advocate in the central office and the building principals, then within-building discussions about the time to be given to the program relative to other commitments. When execution began, the project was both overly time-consuming and lacking in some core materials, so teachers rapidly trimmed and reconfigured it.

The first segment of the schema (col. 1), leading to pre-implementation changes, provides a general map of the predictors, their interrelationships and their interaction with the sequence of local decision-making. The remainder (scenarios in cols. 3-6) is more project-sensitive.

Scenario A: the "overreachers." To begin with the first family of sites, the flow of events can be summarized like this: The project was organizationally ambitious and entailed the creation of a new institutional sub-system, and/or comprehensive role changes. The break with conventional school-wide procedures (Carson) and norms (Perry-Parkdale) was substantial;

in one case (Plummet) there was an entirely new institution. In short, the projects were demanding. Levels of readiness were partial-to-minimally adequate. The projects began full-bore (few changes in the design) with a committed staff and strong administrator-teacher collaboration. There are shades of a crusade, with ambitious objectives for pupils (both cognitive and socio-emotional) and interpersonally close teacher-pupil relationships.

During later implementation the "overreaching" projects began to confront the problems resulting from their discrepancy with organizational norms and procedures. At Perry-Parkdale, for example, the pressures for controlling and monitoring pupils began to set limits on non-academic activities and on amounts of responsibility given to pupils. And at Carson, the investment needed to maintain alternative modes of counseling, planning and record-keeping was heavy. There were also shifts in pupil population, bringing more difficult or less enterprising students into the program. Energy and enthusiasm began to ebb, leading to pressures to simplify and lighten procedures. This brought on a more consequential wave of changes in the innovation, involving more mechanization and structure that streamlined procedures and lowered personal involvement. The projects were "down-sized" not so much in scope or size but in the level of ambition and staff involvement. The changes were then stabilized; the innovation became more firmly institutionalized but paid a price. To some degree the "soul" had gone out of the project in the process.

Scenario B: "locally refitting." These projects shared several antecedent characteristics. Some began with poor user fit (Burton, Dun Hollow) or a moderate-to-large degree of implied classroom change

(Calston, Lido). These were important features, because the innovation itself was small-scale and run entirely at the classroom level. The program was dropped into the classroom or added to an existing curriculum. Moreover, teachers had been told explicitly or led to believe that they could make discretionary changes to facilitate their task and to give the project a good chance of success. The changes involved (a) picking and choosing promising segments of the program (Burton, Lido), or (b) trying out as much of the program as possible, then shedding parts that correlated poorly with the standard curriculum (Calston, Dun Hollow). In the latter case, building administrators leaned on users more heavily during the adoption phase. In the former case, users were in the driver's seat from the start.

The chronicle of program execution for "local refitters" was uneventful, compared to that for the overreachers. As discretionary use had been authorized, only parts of the new practice got into the classroom. At Dun Hollow and Lido, the developer's format was followed fairly closely, then subjected to more changes as materials didn't work, took too much time, or needed resequencing or shoring up. This was more the case at Dun Hollow, where teachers complained of a poor product from the start. At Lido, changes came later, partly as a result of organizational shifts at the high school that cut back on the more innovative features of the program. Similarly, teachers at Calston and Burton engaged in progressive de-bugging to get a good classroom fit. At all 4 sites, administrators looked on from afar, making few attempts to change the course of local modifications. As a result, users made idiosyncratic changes and the program began to look different in different classrooms. At the end of this process of discretionary remodeling, classroom use stabilized with moderate-to-high levels of change in the innovation.

Scenario C: "salvaging". The two projects in this scenario led more adventurous lives. Prior to program execution, they shared four features. First, both faced moderate demands. At Banestown, there were logistical problems around scheduling remedial lab sessions for 8 classrooms. But the interpersonal and normative demands were more severe: sharing pupils and coordinating pupil work in a highly individualistic school, assuming that low-performing pupils could attain grade level achievement, creating an oasis which pupils would not like to leave. At Proville, there were primarily logistical problems: scheduling, transportation, coordination of school-workplace activities. As a result, both innovations called for moderate organizational changes. Third, there was wide latitude given to users by administrators. In both sites, central office administrators were active advocates of the project, which they sold to local schools and executed as rapidly as possible. Too rapidly. At Banestown, users had strong personal commitment and administrative support, but began with inadequate training, materials, skills, planning and provisions for de-bugging. At Proville, the project was hastily thrown together by a newly appointed program director in a bare-bones version of the original design.

The arrow on Figure 8 from "implementation readiness" to "disjointed use"tries to chart this progression. At both sites, users tried to do as much of the project as they understood or mastered, but this amounted to proportionately little. Lab teachers at Banestown spent the first four months, as one said, "just hanging in, trying to survive until June so we could work on it over the summer". We estimated that there were 7 of the 10 key components* missing or unacceptably used at Proville. Banestown was delinquent in 8 of the 11 core components.

The rest of the story is mapped on the schema. Administrators got more active and worked more closely with users to salvage the project. Some of the original design features were reinstated: training, monitoring and matching pupils to internships were handled more thoroughly at Proville; testing, record-keeping and coordination with classroom teachers was put in place at Banestown. But the settled-down version of both projects stayed a highly truncated version of the developer's model.

Scenario D: "enforcing." In the last two projects, orthodox versions of the practice were all but rammed into execution despite the complaints of poor fit and likely classroom turbulence on the part of English high school teachers at Tindale and primary-level staff at Masepa. Classroom-level changes were many and mountainous at Masepa, and the organizational demands were stiff: changes in scheduling, grading, pupil assignment and instructional materials in all areas of language arts. Such demands were less severe at Tindale, but there team teaching was a stress for those used to self-contained classrooms.

Teachers at both sites felt unprepared, although many of the needed components were in place. Training was seen as inadequate, understanding was foggy and materials either absent (Masepa) or too voluminous (Tindale).

---

*This includes additional key components identified by the researcher. If only the developer's list is used, 4 of 7 components are unacceptable or missing.

As a result, initial implementation fell somewhat short of the ideal. Components were cut short or cut out. Users were unable to do it all and, in some cases, didn't like doing any of it. Administrators monitored closely, trying to keep modifications to a minimum. By the second year, teachers had achieved a tolerable level of instructional mastery, but were now leaving out small segments they found superfluous, offensive, boring or ill-designed. At the end of the second year in both sites there was an informal assessment of the demerits of the program, followed by an implicit agreement that a few parts could be replaced by previous units or activities teachers believed to be sounder. Surveillance continued, and mechanisms were put in place for periodic in-service training and for development of materials. The final version was somewhat less than orthodox, but developers kept it close to that level both by enforcing faithful execution and by introducing additional practices and instructional materials in succeeding years.

So there are at least four main roads to stabilized use of innovations in our sample. All involved some reduction in original hopes; all involved reconfiguration as the innovation encountered users in their organizational context.

Conclusions

As predicted, there were numerous changes in the 12 innovations during the course of implementation. Over half the sites changed from one-third to two-thirds of the core components, by reducing them, adding to them or reconfiguring them with other parts of the users' repertoires. Longer projects showed more changes. The pattern at NDN sites was one of early and fairly heavy reductions made before or during initial implementation. Changes at IV-C sites were more irregular and tended to come later, but the overall magnitude of change was similar to that in NDN sites.

In justifying the modifications made locally, users gave these explanations: reductions due to lack of time to do the whole project; deletion of boring, inappropriate, personally uncongenial or overtaxing parts; and addition of "needed," strong or enjoyable units.

Casting a wide net for the best predictors of degree of change made in the innovation, we isolated eight. Poor *user fit* was associated with minor changes. When there was high *anticipated classroom change*, people at the field sites tended to make significant changes in the innovation, often in the direction of paring it down to a less discrepant version. The same thing appeared to happen in cases of high *anticipated organizational change* and poor-to-fair *organizational fit*. The gist here is that when working arrangements and regulations could not accommodate to the innovation, the innovation (in all but 2 sites) tended to get changed to fit. Organizationally speaking, two-thirds of the projects made moderate to strong *demands*, many of which were not visible at the outset. The organizational response to these demands sometimes, but not always, took the form of refashioning the innovation in order to weaken the demands.

Relating *implementation readiness* to magnitude of change showed that ill-prepared projects made significant and early changes. Also, in some cases *largeness/smallness of innovation scale* went along with magnitude of change, with large-scale ventures making greater changes. Finally, *administrative latitude* proved a powerful predictor. When site personnel got greater license to make changes, they did just that, usually in the direction of watering down the more demanding—and potentially change-inducing—aspects of the project. Sometimes administrators and teachers negotiated amounts and types of authorized changes; sometimes teachers got outright discretionary authorization.

We found four different scenarios for latitude-giving and innovation change across our sites. One was inverse to the more typical high-latitude ones; we could call it "enforcing." At two sites administrators permitted few changes, supervising users closely and thereby delivering highly faithful, change-producing innovations in the face of initial discontent and passive resistance. The three other scenarios were: "overreaching" (initially faithful, then highly cut-back implementation as local staff wore itself out); "locally refitting" (smaller-scale innovations with wide latitude given users to make changes); and "salvaging" (ambitious, ill-prepared and roughly-starting projects that were initially cut back, then progressively reinstated).

What sorts of transformations occurred in users during the implementation process? We turn next to this question.

Changes in Users' Perceptions and Practices During Implementation

Introduction/Overview of Findings

In our previous sections on early and later implementation, we reviewed in some depth how users learned and changed. Here, we work at a more general level, seeking answers to four questions:

1. In sum, *what kinds* of practice and perceptual changes take place the course of carrying out an innovation?
2. *How much* change in users occurs? What are the differences between high- and low-changing sites?
3. *Why* does practice change occur? What are the chief predictors?
4. Is there a *progression* in the change process? Do some shifts in practice and attitude come before others?

A methodological footnote. Before moving over this terrain, we should note that our findings are occasionally ambiguous. It was sometimes difficult for informants to distinguish between changes occurring in early and later implementation. In other words, many informants reported ultimate outcomes rather than process changes. For example, at four sites, users mentioned that they had come to trust pupils more and now had a lower need for control over pupils' work and behavior. This is typically a *later* assessment, the fruit of a fairly long or intensive experience with lower control over classroom life. But informants had trouble pinning down just when this sense of trust appeared, what had led to it, and what resulted from it. The chief device we had for making these distinctions was that of a retrospective interview, taking the informant very deliberately over the sequence of events, using stimulated recall. We also compared what users in their first or second years told us with what users in their third or fourth years said about *their* initial experience. And we had some direct longitudinal data from the year we spent studying implementation at the twelve field sites. Still, making a clean distinction between in-process and "final" changes was never easy.

In brief, we found that teachers had become better clinicians, who were more conscious of their pupils as individuals, and more skillful at helping them. Such changes were moderate to strong in half our sites; they were caused by the demands of larger-scope projects that asked users to change and stretch, in sites where administrators pressed for good implementation. Everyday practice change led to new attitudes toward the innovation and skill in using it; later changes were more basic (core attitudes, basic constructs).

Types of Reported Change

As we have seen, some innovations were giants and others midgets in terms of the changes they called forth. We had sites at which people spoke of being "transformed" and others where informants had to think long and hard to find something they were doing differently as a result of the new practice. Sites in the latter category had either substantially scaled down the innovation (for example, Burton) or discontinued it (Dun Hollow, Proville). Eventually, however, all informants at all twelve sites reported some personal changes arising in the course of project execution. Table 14 lists them, assigns them to one of several categories, and shows the number of sites at which at least one informant mentioned the item. Only items mentioned at more than one site are shown.

Overview. Taken as a whole, the table yields a good vision of what users saw these innovations as accomplishing for them. There are some fairly distinct leit-motifs. Facing first toward the pupils, the categories and items point to successful attempts to individualize and differentiate classroom or project activities, with greater latitude given pupils to organize and carry out their own work, and with a premium put on interpersonal closeness and trust. Both emotional and cognitive concerns are present. And, looking toward themselves, informants believe they are more instructionally skillful,

Table 14: User Change During Implementation: Types and Items#

Type/Items

1. Changes in everyday classroom practices
   (Daily organization, routines)
   - (5) More individualization, more sustained individual contact
   - (4) Pupils more "in charge", self-directed, self-paced
   - (3) Working with others, sharing pupils
   - (3) Less time for other activities; other subjects driven out
   - (2) More accountable to outsiders, more policed
   - (2) Less structure, less pre-arrangement
   - (2) More structure; regimentation
   - (2) Multiple materials, no longer one text, manual, set of workbooks
   - (2) No longer able to monitor whole class
   - (2) Changes in scheduling

2. Repertoire expansion
   - (3) Ability to individualize, differentiate
   - (3) More 'meat' in curriculum, more approaches to call on
   - (2) Greater skill in diagnostic/testing procedures

3. Relational changes
   - (4) Closer to pupils, more concern for pupils
   - (2) Closer to other teachers (in team)
   - (2) More egalitarian relationships with pupils

4. Better understanding, comprehension, of:
   - (5) Actual ability/skill levels of pupils
   - (3) Emotional problems of pupils
   - (3) How the school system operates, who has power/influence
   - (2) Principles and procedures for mastery learning

5. Self-efficacy
   - (3) More resourceful, effective
   - (3) More self-confident
   - (2) Less energy, low investment, burnout

6. Transfer
   - (3) More organized in general, better at planning
   - (3) Using skills, procedures in other subject matters

7. Changes in attitudes
   - (4) Able to trust pupils, less need for control
   - (2) Can 'share' pupils; don't need own class

8. Changes in professional self-image
   - (5) Myself as a teacher

Numbers represent number of sites where item was mentioned

especially in techniques for individualizing work with pupils. The general sense is of users as better *clinicians*: they can diagnose, treat and plan more effectively. They also have a bigger bag of instructional tricks - new units, new sequences within existing units - some of which are transferable to other subject matters. Finally, innovating seems to be an *accomplishment*, a means of showing oneself and others that these practices can be mastered, even under difficult conditions, possibly also at the cost of energy depletion. This fresco matches the type of projects we found ourselves studying in the NDN and Title IV-C programs; they were predominantly *remedial* projects, with a pupil public that was variously under-achieving, disaffected, deviant and, as a result, *difficult* to handle and slow to change. So when changes *are* observed, they become a source of strong professional pride.

Now to survey the several categories of user change reported in the course of project execution.

1. *Changes in everyday classroom practices*. We saw earlier that new practices make *demands* on classrooms and schools, many of which surface gradually, such as changes in norms or institutional climate. Generally speaking, users are aware at first of the changes in their everyday organization and routines. Looking at Table 14, some of these demands may appear to be trivial (using multiple materials) and others momentous (pupil self-direction), but appearances can be misleading. Working with multiple materials, for example, often meant jettisoning the teacher's manual, workbooks and worksheets — leaving the user, as one put it, "all naked".

The changes are of several types: less group instruction, changes in monitoring and scheduling, a different mix of material covered and a new division of labor between teachers. A salient theme, as mentioned above, was the shift from group- to individual-centered instruction. Many of these programs turned around mastery learning, diagnosis-treatment procedures, counseling, programmed instruction and other modes of differentiated classroom or field work. Functioning in these new modes had multiple effects. A teacher at the Calston site reviews some of them:

> I was able to get closer to the children. I was actually working with them. I wasn't just reading with a group and pulling out information from students one at a time. Also, I was no longer simply giving students assignments and sending them off to do some work. The individualization of the program has forced me to see what each child is doing specifically.

There are several consequences of de-centralizing school or classroom life, many of them appearing in Table 14. For example, pupils are more in charge of their own instructional pace and sequencing, which makes them harder to monitor. Many teachers were uncomfortable with this, at least initially, saying "I don't really know what they can and can't do" (Masepa), or "Maybe they know what they're doing, but it doesn't feel right" (Calston). Also, self-pacing meant that pupils were making more, and more varied, demands on teachers —asking for new assignments, demanding corrections so they could move on to the next module, asking for reviews of difficult segments — that were previously handled collectively, and at a time determined by the teacher. Many users came up with revealing images when talking about these changes — "like a treadmill", "can't get my wind", "relentless" — that suggested greater wear and tear and probably contributed to the later "routinization" and "streamlining" of these innovations that we reviewed in the previous section.

A related item: doing the innovation sometimes meant doing less of another core activity, with no easy way of resolving the dilemma. At three sites (Calston, Masepa, Dun Hollow) this was a major issue; "dropping in" or "adding on" a unit amounted to driving out another, and administrators wanted both in. Here was another decision point at which innovations were often truncated. And the process could sometimes be insidious:

> I used to do a lot more group work with conferences, games and debates. Strange, I've forgotten I did all that. When I think about it now, I really miss it. (Teacher at Masepa)

Two other items on the list deserve a short comment. Some of the projects (e.g., at Tindale, Perry-Parkdale and Plummet) involved teamwork, with new, sometimes threatening consequences: sharing pupils, being "on stage" in front of other teachers, while teaching and coordinating. Coordinating and being visible also made users more accountable to others, including both administrators and pupils:

> Most teachers wouldn't want it. Your neck is on the block. The successes and failures of the students rebound directly on you. You can't hide in the classroom. (Staff member at Perry-Parkdale)

2. Repertoire expansion. Changes in daily practice brought with them new skills and routines. As Table 14 shows, having to individualize made for greater skills in diagnosing and differentially instructing. Also, if the add-on and drop-in units drove out other segments, they also added to the instructional resource bank that users could draw from. As we saw earlier (see pp. 61 ff.), getting access to new skills was one of the prime motives of users in deciding whether or not to volunteer for a new program. Inno-

vating, with the attendant front-end training, injection of new materials and help in moving from collective to individualized classroom management, was an attractive way of expanding one's repertoire without having to go it alone, spend money or cut into vacation time.

3. Relational changes. As the teacher at Calston noted, individualizing entailed closer contact with pupils. Users spoke of "knowing" their pupils better, and, in some instances, of caring more about them. In terms of instructional treatment and subsequent pupil performance, this is a powerful formula: more individual work, tighter relational bonds, tailored remedial materials. Some of this comes through in the interviews. An illustration:

> There's really more one-to-one contact. When you're conferencing, you're really with that child and he knows it...You really get to develop warmer feelings with that child, and he really gets to show you that he's got that mastery level, and that makes him feel really good. (Teacher at Masepa)

Similarly, a teacher at Carson noticed that she had become "more sensitive to kids, more aware of them individually, more aware of how I affect them." She was doing "more mothering," just as the men at Perry-Parkdale found themselves doing more fathering. Note, however, that relational shifts can also affect the balance of power in the classroom or lab. At two sites (Perry-Parkdale, Plummet), users spoke of greater egalitarianism - and its limits. There is a nice vignette from Perry-Parkdale: a student complained to a staff member that he could learn just as well by taking various jobs as by doing the career education program. The staff member's response:

> The hell with what you want. I'm 32, you're 17.

Finally, relational changes stemming from team teaching or from other forms of inter-user collaboration were mentioned explicitly at two sites, Plummet and Tindale. But from an analyst's viewpoint, such outcomes were more widespread across our sites, and were sometimes negative. Some users came to dislike others (for instance, at Banestown and Perry-Parkdale), while at the same time getting closer to *other* colleagues. Cohesion was strong with positive effects at Carson, Masepa and Lido, but was not named specifically by informants.

4. *Better understanding, comprehension*. The items listed in this category in Table 14 are fairly straightforward. Installing a mastery learning program brought with it an understanding of its mechanics and assumptions. Doing individualized remedial work, usually with some diagnostic testing connected to it, gave users a far more precise fix on ability and skill levels than they had customarily had. "It [otherwise] would have taken me six months to see their weaknesses," said a teacher at Astoria, "and I'd have more doubts about how right I was." Note that this item is mentioned at nearly half the sites. A corollary item is the increased understanding of pupils' emotional problems (at Banestown, Carson and Plummet), and the awareness both *that* and *how* ability and achievement levels are tied up with emotional problems. Some projects (Banestown, Carson) also brought teachers into contact with the dynamics of pupils' home life.

A final item is increased knowledge of school- or district-wide politics and economics. Users learned useful lessons from the pressures exerted on them to adapt, from rising and falling budgets, from the second-order effects of apparently innocuous changes in supervision or testing, from interpersonal warfare within the central office, from the conduct of grantsmanship. It was a glimpse into a theatre that many classroom-bound practitioners had never seen. Some — notably users with career shifts in mind — found it a valuable apprenticeship; others were turned off and gradually went sour on ambitious school improvement efforts.

5. Self-efficacy. From both the pupils' and teachers' vantage points, technical mastery of the program was an important reinforcer. As we saw earlier, the difficulties encountered by users in early implementation gave way progressively to the sense of "being on top of" the project, of "having a good handle on it." New routines emerged, unsteady segments got stabilized, bugs were eliminated. Users began to play with the project, both in their heads and at school - varying components, trying out a new segment, integrating a piece from another subject matter. As Table 14 shows, users remarked on their experience of mastery by feeling more resourceful, effective and self-confident. This was explicit at three sites, but implicit at most others. Pooling the comments from site informants, the basic message reads something like this: "I can do it. I can see that I can do it, and so can the others. It's been a real challenge." In some cases, however (for example, Carson and Plummet), some users also felt burned out in the process.

6. Transfer. This category has two items in Table 14, both relating to what we call "meta-effects" in our later discussion of program outcomes. First, executing these innovations seemed to help users get their instructional houses in order at three sites - Calston, Masepa and Tindale - all places implementing a structured, scripted program. There was even evidence at Tindale and Masepa that one of the private objectives of local administrators was to improve teachers' daily organization by inserting these projects into the schools. The line of thought went like this: "It'll help them get it together....it's good for disorganized people like Mrs. X" (Masepa). And the

gambit seemed to work. Users at Tindale spoke often of being "more organized" since they began to work with the remedial curriculum. Users at Calston spoke of "having everything ready when you need it". Teachers at Masepa said they had learned to plan more carefully. In all three cases, these habits carried over into other subject matters, along with some of the core program components (reinforcement, advance organizing, rapid error correction, individualizing).

7. Changes in basic attitudes. The items in this category of Table 14 are interesting. Logically enough, how users feel about their work evolves from their trials and tribulations while doing it. Team-teaching brought users at Banestown and Perry-Parkdale beyond the privatism ("my kids") that classroom-bound instruction usually imposes and nurtures. Similarly, individualization and pupil self-pacing or self-management demanded a less centralized, controlling mode of supervision; otherwise users would have gone crazy monitoring 25 different schedules, so letting go was adaptive, but it wasn't easy. Here are two testimonies:

> I've learned to let go of the child. They play those games with me and with others. I've had to accept that...I've also had to trust the students more since they are working on their own. (Teacher at Calston)

> I just started into the KARE approach and went from day to day. KARE pointed me in that direction, and gradually I gained a different sense of control at off-campus sites. I was learning how to be flexible. (Teacher at Lido)

Occasionally, these accounts read like a pilgrimage. For example, a user at Perry-Parkdale recounted his experience of "trying to force students to do things", then of "laying back", worrying much of the time about whether pupils were actually going to their job sites. Previously, he had worked in a classroom setting where everyone could be monitored. In addition, there were strong institutional pressures at these sites to account for pupils' time and performance and to control their behavior during the school day, even (or especially) if they were off campus. Both factors contributed to uneasiness on the part of project staff at all three sites involving non-classroom, off-campus programs (Lido, Perry-Parkdale, Proville). As the Perry-Parkdale staff member summed it up:

> It's hard to swallow, not having control of the kids.

8. Changes in professional self-image. The logical next step in this progression is a change in users' vision of themselves as teachers. As the excerpts from teachers at Calston and Lido just suggested, some users find their way in the course of implementation to a self-redefinition as a more "trusting" or less authoritarian practitioner. There were instances of this at these two sites and at Perry-Parkdale.

But there are other scenarios. At Plummet, at least two informants came to the realization that even a highly experimental alternative high school might be unable to reach adolescents who were turned off or troubled, no matter how strong a teacher's commitment. Perhaps as a consequence, these users began to look elsewhere - possibly in a new role out of education. At Masepa, the script was still different. There, almost all informants had defined themselves as spontaneous, casual or unstructured in their work prior to this program. They now found themselves running highly regimented, closely clocked, faintly military classrooms, with few opportunities for group work or changes of pace. And they were doing well — being amazed both at the performances of pupils and at their own metamorphosis. In a classic instance of dissonance-reduction, they began gradually to redefine themselves as "pretty structured", and to transfer some of the same techniques to other segments of their teaching.

Anticipating our later treatment of the process or progression of practice and attitude change, we want to note two things here. First, practice and attitude changes follow logically from the demands of the project. This accounts, for example, for the recurrence of certain themes in the different categories of Table 14. For example, taking the theme of "letting go", the progression seems to look like this:

Individualization/ pupil-centeredness → Pupil self-pacing Self-organization → Inability to monitor (in class, off campus) → Development of trust → Letting go → Changed self-image as a teacher

Note that in order to simplify the progression, we have left out some steps. For example, pupil-centeredness also leads to relational closeness and to a better grasp of individual ability levels and emotional states. Trust then develops as a result of the bond between staff and pupils —"trust violation" was a common leit-motif at many sites. There is something like an implicit contract between the parties that pupils going off campus will not "betray" their teachers in return for pastoral care. The same agreement obtains in classroom-bound projects: pupils will complete their work and do the requisite exercises or mastery tests in return for individual help with difficult concepts or operations.

The second point follows directly. Trust and letting go are accomplishments; they come after cycles of early implementation - often after a few wild, overcompensating swings between blind confidence and total mistrust.

They also assume some evolution on the part of pupils, who only gradually show themselves to be trustworthy as they, too, contend with the demands of the project and the institutional or personal stresses it exerts. The point is that changes in everyday classroom practices probably precede cognitive and relational changes, which in turn build gradually into shifts in attitudes and in the more basic constructs that make up users' operational philosophies.

How Much Change?

As we said in the introduction to this section, some projects transform users and others entail minor tinkering with a curriculum or instructional skill. Still others are in between. There is, however, still another category: projects which could have resulted in substantial practice and attitude changes but didn't. Typically, these were unsuccessful ventures, and ones which were disliked, either because of their poor design (Dun Hollow) or their purely opportunistic nature (Proville). But not liking a project, as was the case at these two sites, was not sufficient to avoid its change-inducing aspects. For instance, several users at Masepa and Tindale complained bitterly of the weaknesses and arbitrariness of the new curriculum, but admitted that they had been durably altered by it.

Before making and discussing estimates of the degree to which users' practices and perceptions were changed across the twelve sites, let us look briefly at three exemplars: a high-change site, a low-change site, and an unsuccessful site.

A high-change site: Masepa. For all users, the ECRI language arts project was, as one put it, "the biggest thing I've taken on." The program involved a near-total organization of the classroom, highly scripted instructional sequencing that was hard to put in place, the integration of subject matters that were previously taught separately, drastic decentralization of pupils' seatwork and evaluation, and abandonment of the customary teaching props: teacher's manual, workbooks and worksheets. First-generation users were amazed that they had actually waded in voluntarily; many used images such as "falling down and getting up" or "getting wiped out every day". Here is how it looked to one user:

> Think about how many patterns I've had up to this time. It's real hard for someone like me to catch onto this program, such a big shift.... It's a whole new philosophy, like that mastery idea with spelling.

In terms of reported changes in the course of implementation, there are six features that distinguish Masepa from low-change sites:

1. The project began with a vengeance. Initial implementation required a new set of skills and routines that were highly discrepant from users' previous practice.

2. The reported changes were pervasive. All users mentioned changes in daily routines and in relations and understanding. At least 3 to 4 claimed changes in basic attitudes and constructs. All reported instances of repertoire expansion and transfer to other subject matters.

3. Users took a long time to settle down. Third-year users still felt that they were not in control of the program, in part because new segments were added each year.

4. The project consumed all available energy. Users were not experimenting elsewhere and claimed the project was wearing them out.

5. When users talked about changes, a fair number of negative changes cropped up; loss of variety, sacrifice of favorite activities, uncertainty

about success, losing touch with certain pupils.

6. Teachers said they were *forced* to make as many and as drastic changes as they did. Without administrative pressures, far less of the project would have been executed.

A low-change site: Burton. Recall that this was a drop-in social studies curriculum, from which teachers were allowed to pick selectively. Had the program been executed as designed, there would have been far-reaching changes in everyday classroom practice. To run through the six dimensions used above:

1. Three of the four users *began timidly*, with very modest changes in their habitual classroom routines. The project was substantially down-sized prior to initial use.

2. Three of the four users had *trouble identifying any practice changes* during or after a full year of use. One said that he had used so little of the program that there was no possibility of an impact. The salient item was repertoire expansion; all users felt they had enriched their social studies curriculum.

3. Users had *little trouble getting on top of the project*, since they were making only minor changes.

4. All users saw the project as a *small part of their yearly action*. More energy was being channeled elsewhere.

5. All users *felt positively* about the few changes they had made, but these feelings were limp.

6. *Only one of the four users felt stretched by the experience*. The others had made discretionary changes that reduced the gap between prior and ongoing practice. Administrators kept their hands off, on the premise that this was a trial year. Contrasting Masepa with Burton, it looks as if more

is changed when more is ventured.

A negative experience: Dun Hollow. Recall that this site was the locus of an Eskimo project dropped into two primary schools. Teachers complained from the outset that the units were poorly designed and hogged too much of the social studies curriculum. There are features consonant with both big-change and small-change projects, but what is unique is the shift from an early experience resembling the big-change innovations to a later configuration more like the Burton site.

1. Start-up was fairly *ambitious*; it involved a major reshaping of the social studies curriculum and some time-consuming exercises teachers had never tried.

2. Changes were, curiously, at *both* ends of the continuum. There were shifts in daily working arrangements and some strong attitudinal shifts, one of which had to do with suspicion about any new innovations that might be paraded at school.

3. It took *half a year* to master the project technically, mainly because of its design features (for ex., activities pegged at a higher cognitive level than pupils could handle).

4. A *lot of energy* was expended at first. The flow ran like this:

Initial difficulties ⟶ Annoyance → Resignation (to re-designing it, investing energy in it) ⟶ Guilt (over the decision to cut back) ⟶ Futility (of spending time on it)

By the end of the year, energy investment was almost nil.

5. Users had *nothing good* to say about the practice, apart from the validity of the initial concept (sensitivity to, familiarity with Eskimo culture).

6. As in the big-change projects, users felt pushed beyond what they would have voluntarily taken on. But users also had misgivings about starting in with what they saw as a poor-quality project, not about the discrepancy between prior and anticipated experience.

By way of pulling together these strands, here is a summarizing table:

Table 15: Exemplary Sites Showing Different Degrees of User Change

	High Change	Low Change	Negative Change
1. Start-up discrepancy from usual practice	High discrepancy	Low discrepancy	Moderate discrepancy
2. Pervasiveness of change	High — all facets	Low — repertoire only	Low/moderate— routines and attitudes
3. Technical mastery	Slow in coming	Rapid	Slow, then rapid
4. Energy investment	Very high	Low	High, then low
5. Negative changes reported	Some	None	Many
6. Stretched--pushed beyond voluntary change	Yes — well beyond	No	Yes — at the start

Predictors of Practice Change

Up to now, our analysis has dealt with the features of practice change and with dimensions that distinguish between high-changing, low-changing, and negative experiences. Some of those dimensions look causal; discrepancies between past practice and the proposed new practice, for example, seem, logically enough, to herald higher magnitudes of practice change. We will try now to order some of these variables to get a better look at these several influences.

We needed to order the twelve sites by magnitude of practice change. Using field researchers' site reports, we made the estimate by noting the number of categories in which changes were reported and, within categories, the extensity of the claim (e.g., noted by more than one informant). We then tried to separate out trivial or short-term changes from more deep-seated or fundamental shifts, such as transfer of innovation-specific skills to other areas, and shifts in core attitudes or constructs. Table 16 shows these estimates arrayed in the form of a Guttman scale, from which we made the estimates of change in Chart 34.

Chart 34 arrays the twelve sites by practice change magnitude, and displays three kinds of predictors. First, we see three baseline discrepancy indicators, the degree of practice change required to implement as planned, the actual size/scope of the project, and the extent of classroom or organizational constraints to carrying out the practice as it looked just before starting in. (These variables were described and rated in the section on early implementation. In our "causal network" analysis (see pp. 324 ff.) we call these variables "implementation requirements"). We try a crude test of the predictive power of these indicators by scoring each one (minor/small/poor*= 1, moderate - 3, major/large/good* = 5), then summing them to make an "early implementation requirements" prediction index).

---

*Scoring reversed for classroom/organizational fit.

A second predictor is the general majority attitude toward the innovation during implementation and a third is the degree of direct and indirect administrative pressure to maintain initial levels of change.

Table 16: Reported Changes in User Practice and Perception

Sites	Dimensions of change arising from implementation						
	Daily Routines	Repertoire	Relation-ships	Under-standings	Self-Efficacy	Transfer	Basic Con-structs, Attitudes
Masepa (NDN)	X	X	X	X	X	X	X
Plummet (IV-C)	X	X	X	X	(X)	N/A	X
Banestown (NDN)	X	X	X	X	X	(X)	
Tindale (IV-C)	X	X		X	X	X	
Carson (IV-C)	X	(X)	X	X	X	N/A	
Perry-Parkdale (NDN)	X	(X)	X	(X)	(X)	N/A	(X)
Calston (NDN)	X	X	(X)	(X)	(X)		(X)
Lido (NDN)	X	X		(X)			(X)
Astoria (NDN)	X	X	(X)	X			
Burton (NDN)		X					
Dun Hollow (IV-C)	X-O	X-O					(X)
Proville (IV-C)	X-O				N/A	N/A	

X = change claimed unambiguously by several informants
(X)= change claimed unambiguously by only one informent
X-O = initial change, then reversion to initial practice
N/A = not appropriate/applicable
Blank = no unambiguous changes cited

Let us now march deliberately through Chart 34.

Magnitude of actual practice change. Although our cut-off points are arbitrary, there is still some variance here, with the central tendency in the moderate-to-low range. Half the projects resulted in moderate to high change; the other half had more modest change. With

Chart 34: Predictors of Magnitude of User Practice Change

EARLY IMPLEMENTATION REQUIREMENTS

Magnitude of change, by sites / Predictors	Required practice change*	Project Size/scope	Classroom/organizational fit	Index of early impl. requirements	General attitude during implementation	Administrative Pressure	
						Direct: Strong-arming	Indirect: exhorting, reinforcing
High Change							
Masepa (NDN)	major	large	mod/good	14	+	high	high
Plummet (IV-C)	mod-major	large	good/poor #	12	+	low	high
Moderate Change							
Banestown (NDN)	major	small/mod	moderate	10	+	mod	high
Tindale (IV-C)	major	large/mod	moderate	12	+	high	high
Carson (IV-C)	major	large	moderate	13	+	low	high
Perry-Parkdale (NDN)	mod-major	mod	moderate	10	+	low	low/mod
Moderate-low change							
Calston (NDN)	moderate	small	poor	9	+	mod.	mod.
Lido (NDN)	moderate	small	moderate	7	+	low	mod.
Small - no change							
Burton (NDN)	minor	small	good	3	+	low	mod
Dun Hollow (IV-C)	minor	small	poor	7	-	mod.	low
Proville (IV-C)	minor	moderate	moderate	7	-	mod.	mod.
Astoria (NDN)	minor	small	good	3	+	low	low

*Discrepancy between users' customary instructional practices and those required to implement the innovation at the time of initial use.

good in the district, poor for needs of incoming students

BEST COPY AVAILABLE

a few exceptions, none of these innovations was revolutionary. On the other hand, we also had few placebos. We can also see that between-program differences (NDN vs. IV-C) are not tied to magnitude of change.

Required practice change is, overall, considerable and does seem to covary with magnitude of reported change during implementation. In other words, what an analyst might have expected to happen tended to happen, notably at the lower end of the scale. But how does it happen that most of the innovations were unrevolutionary in terms of magnitude of user change, while the degree of implied practice change was fairly high? One answer is that several of these projects (Plummet, Banestown, Perry-Parkdale, Lido) took users from their customary surroundings, usually the classroom, and put them in a new environment — an alternative school, a pull-out lab, a separate program, a field site. This called for some rapid adjustments, notably in the initial phases— thus high practice change—but did not necessarily take users beyond changes in daily routines and basic instructional repertoire—thus lower final magnitude. In fact, it may have been easier for users to contend with a new activity in a new environment than to have their habitual environment seriously shaken up, as was the case at Masepa, Tindale and, to a lesser extent, Carson.

Project size or scope seems to predict magnitude of practice change fairly well; ambitious ventures and midget ventures mostly turn into large and small changes respectively in user practices. But some small ventures result in moderate change (e.g., Calston, Banestown) if only because a modest institutional project can still be an ambitious individual project for those users most caught up in its implementation. One ambitious undertaking seems to have ended up with only moderate user practice changes, even when estimate of initially-required practice change was high. This is the Carson case and it seems, at first glance, anomalous.

Recall that Carson was the site of an ambitious individualized instructional-counseling and prescribing project, carried out initially with collective enthusiasm and, judging from most indicators, moderately well institutionalized in its later years. If done as planned, the program would have markedly modified teachers' role performance by putting them in a more differentiated, interpersonally closer relationship with their pupils, including contacts with pupil's home life. But there was a general drift over time at Carson toward a more streamlined, "routinized" version of the program which, for some informants, took away its core. Later users, in particular, seemed to be "just doing" the program, with far less commitment than early users had had. And even the early users reported few practice changes during implementation; after 3 or 4 years of use they were taking the program for granted, and doing less of it.

Finally, the other deviant case is Proville, where a program of moderate scope resulted in little practice change. By and large, the program there was simply sabotaged by resisting principals and vocational educational teachers, and weakly supported by its central office advocate. In addition, though the program asked for role changes on the part of students who left the classroom and their support-staff mentors, who had to teach rather than just type, drive trucks, or maintain lawns, it really did not change vocational education teachers, who "simply" had to give their reluctant permission for students to leave their regular voc. ed. classes.

Classroom and/or organizational fit problems seem to go moderately well with lower degrees of reported practice change, suggesting that the constraints involved set a limit on the possibility of making, say, changes in relationships or basic attitudes. For example, Calston was constrained by the presence of an existing reading program, which vied for time and attention with the 4D reading project. Had users been given their head, it is likely that the project would have brought on farther-reaching shifts in teaching repertoires, transfer to other subject matters and a full understanding of the mastery learning concept.

But we also see deviant cases here: the user-transforming Plummet site started with many problems of fit (which had to be overcome through the energy of an ideologically-committed staff); the IPLE program at Burton was largely a drop-in program, where administrative latitude for using only parts of the innovation was substantial, and users used (and learned) little. Once again, we see that challenged users may be the highest changers.

Prediction index. A score summing these 3 early implementation requirements variables does seem to correlate fairly well with magnitude of practice change during implementation, especially in the lower part of the scale. The middle/upper region has two slight anomalies. Masepa changed more than would have been predicted, and Carson, as we just saw, less.

General attitudes during use are too lopsided to discriminate between sites, except that users in two out of four non-changing sites clearly disliked projects that, in part as a consequence of poor user support, ended up making few ripples in the stream of classroom life. Had we used a more differentiated scale, the results would be more conclusive. For example, at the end of both the first and second years, there was a vocal minority at all the higher-change sites — Masepa, Plummet, Banestown and Tindale — who had serious misgivings about the project, especially at Masepa and Tindale, where administrators had strong-armed users into continuing. Users were uniformly content at the lower-change sites: Calston, Lido and Burton. The message here may be that major practice changes are likely to have some kicking and screaming associated with them.

At first, *administrative pressure* does not seem to go coherently with magnitude of practice change. Strong-arming was effective at Masepa and Tindale, but ineffective at Dun Hollow and Proville. Did lack of strong-arming *increase* practice change at Plummet or Carson? It's difficult to know. But if we expand the notion to include *indirect* pressure or, put more generously, to include exhortation — encouragement with the expectation of follow through on the user's part — things look different. Note that exhorting goes more with higher-changing sites; note also that the additive — or possibly multiplicative — effect of strong-arming plus exhorting is stronger at the higher-changing sites. So, to some extent, administrators seem to be pushing up increments of users' practice change. When it *all* comes together - major implied practice change, major scope, minor fit problems, overall positive user attitudes and a carrot-and-stick leadership - we get a Masepa; and when practically all these omens are reversed, we have a Dun Hollow or Proville. In policy terms, the major question here is whether some or most of these variables are *manipulable*, that is, can actually be put into operation in the course of the school improvement process. More on this later.

A progressive model. Let us now try, in one picture, to put all these pieces together. We have just seen that implementation requirements can, if imperfectly, predict the magnitude of practice change. Direct and indirect administrative pressure from principals and superintendents seem to contribute as well. Finally, some dimensions of user change seem to come later or to be more difficult to achieve than others, notably transfer of skills to other tasks, and core attitudes about children or one's role as a teacher. If we lay out all these variables over time, as a progression, the resulting network looks like this (see Figure 9).

Conclusions

Implementation of these innovations produced substantial and fairly widespread changes in users' practices and attitudes, although there was variability among the different projects. Some were "teacher-transforming." others were—or became—very modest efforts with correspondingly modest effects.

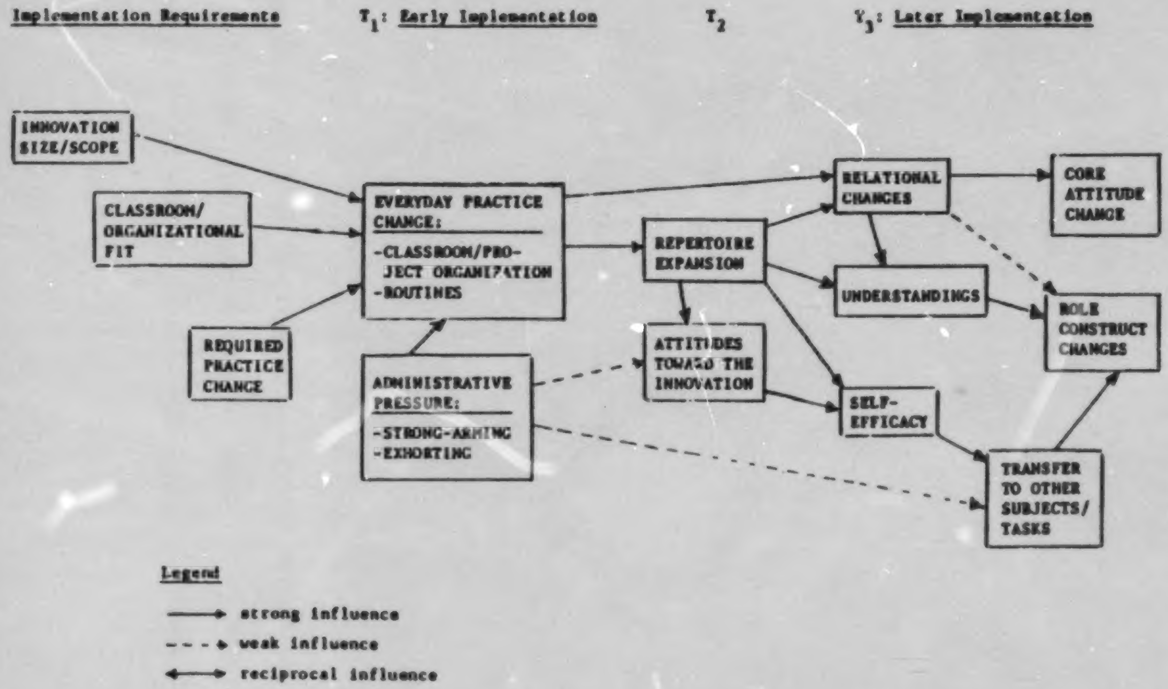
Users reported and researchers observed eight types of changes attributable to the effects of the innovation:

Changes in users' everyday classroom practice
Repertoire expansion (ex: ability to individualize)
Relational changes (ex: better rapport with pupils)
Cognitive growth (ex: better understanding of pupils' ability levels)
Self-efficacy (feeling more resourceful, instructionally effective)
Transfer of innovation-derived skills to other parts of one's instructional practice
Changes in attitude (ex: more trusting of pupils)
Changes in professional self-image

Across the 12 sites, the drift of these changes was that teachers had become better clinicians, more instructionally skillful, able to better individualize and differentiate instructional treatments, and more interpersonally close to pupils.

These practice and attitude changes followed directly from the demands made by the project; doing one-on-one remedial work, for example, led usually to the development of better diagnostic skills and individualized treatments on the part of teachers.

Fig. 9: Causal Flow Chart Tracing User Practice Changes


Implementation Requirements
T_1: Early Implementation
T_2
T_3: Later Implementation
INNOVATION SIZE/SCOPE
CLASSROOM/ ORGANIZATIONAL FIT
REQUIRED PRACTICE CHANGE
EVERYDAY PRACTICE CHANGE:
-CLASSROOM/PROJECT ORGANIZATION
-ROUTINES
ADMINISTRATIVE PRESSURE:
-STRONG-ARMING
-EXHORTING
REPERTOIRE EXPANSION
ATTITUDES TOWARD THE INNOVATION
RELATIONAL CHANGES
UNDERSTANDINGS
SELF-EFFICACY
CORE ATTITUDE CHANGE
ROLE CONSTRUCT CHANGES
TRANSFER TO OTHER SUBJECTS/ TASKS
Legend
strong influence
weak influence
reciprocal influence

About half the sites reported moderate to high levels of user practice change stemming from the innovation. At high-change sites, the projects began with a vengeance, induced pervasive changes (not only in daily routines but also in basic constructs), took a long settling-down time, consumed all available energy, caused negative changes (ex: loss of variety, sacrifice of other, favorite activities), and did all this through administrative pressure. At low-change sites, there was the inverse profile: timid beginnings, modest changes in daily routines, rapid practice mastery, minor energy expenditures and little user sense of having been "stretched".

Several factors were found to predict magnitude of practice change: *required practice* change, project *size* or scope, classroom and organizational *fit* and administrative *pressure*. The combination of direct pressure ("strong-arming") and indirect pressure ("exhorting") seemed to deliver higher levels of user practice change in the course of implementation.

We were able to assemble these findings into an inclusive model of user practice change predictors and outcomes, with the more immediate outcomes (ex: attitudes toward the innovation) building up to more consequential ones (ex: changes in core constructs, transfer).

With this image of *user* change in mind, we now turn to *organizational* change.

Transformations in the School as an Organization

Introduction/Overview of Findings

We have been examining the degree to which innovations change in the process of implementation, and the degree to which innovation users learn and develop at the same time. The third, associated aspect of changes during implementation involves the school as an organization. Schools are social systems; their constituent classrooms, with their operating practices, rules and norms, and their working relationships among adults, make up a larger whole that forms a context for any innovative effort. And the local school is in turn embedded in the organization of the school district. It is logical to expect that that context itself may become transformed in some way: when innovation meets organization, organization may change along with the innovation and its users.

The programs we are studying, NDN and IV-C, have sometimes been charged with a "technological bias" -- that they are simply encouraging schools to carry out "part-innovation" -- developing or replacing new parts which are not functioning well in the "machine" called a school. With this bias, one assumes that the "receiving system" -- the school -- is somehow taken as given, not itself subject to change and development. But we believe that view is too limited. NDN in particular, and IV-C to some extent, are programs that have been interested not just in getting new part-innovations in place, but in developing the capacity of the school for further problem-solving, change, and innovation. Some NDN and IV-C innovations are quite substantial; implementing them, and getting them into place on a continuing basis could be expected to alter the organization. At a minimum level, the simple addition of the innovation represents an organizational change of some degree. Beyond this, there may be more-comprehensive, "meta-level" changes (for example, a climate more favorable to innovation) or side effects (for example, increased faculty cohesiveness) that constitute additional organizational transformations.

We considered that organizational changes might be visible at three different levels: structure, which includes rearrangements of persons, roles, groups, resources; procedures, methods of all sorts for carrying out the work of the school; and climate, the attitudes, feelings and relationships among persons. As we talked with and watched people at our sites, we were interested in the following aspects of these features:

- what they looked like,before and during the implementation process,
- how good or poor a "fit" the innovation was with these organizational features,
- what difficulties or problems the innovation posed for the organization,
- what sorts of changes were of a transitory, implementation-specific sort, and what changes were more durable.
- what the net extent or scope of changes seemed to be ,and
- which of the above (or other) factors might explain the amount and type of organizational change noted.

Our field notes for each site were used to answer a series of research questions covering the issues above.

In brief, we found clear evidence of organizational change in about half our sites, though this was often limited to the installation of the innovation itself. Organizational change was most likely when local contextual pressures led to administrative commitment, and to the choice of a large-scale, demanding innovation. Administrative pressure and adequate support of users usually led to full-scale implementation and the structural changes that followed in its wake.

Organizational Change: Three Illustrations

Chart 35 displays the results of a summary analysis for three sites. We choose three representative sites here simply to avoid overloading the reader. In our analysis, we worked from a large matrix of all 12 sites, each cell with data of the sort shown in Chart 35, drawn from the relevant portions of the case studies. The Chart can be usefully read across, to get a feeling for organizational change dynamics in the particular site, and vertically, to note comparisons for particular features. We might look, for example, at the Carson site, which aimed for role changes in all district personnel, through a complex, demanding program to individualize learning opportunities for all children. Problems and issues ranging from overload to the exercise of power appeared, were coped with, and led to rather pervasive organizational changes, such as the creation of new management and in-service structures, and norms supporting interaction between colleagues. In sharp contrast, the Burton site involved a social studies program that could be "dropped in" to the existing school. Its potentially risky, organization-changing properties were avoided by permitting isolated users of the innovation to pick and choose the aspects they would like to try out, and the organizational impact was essentially nil. The Perry-Parkdale site is an intermediate example; it adopted a work-experience program which operated as a sub-system, receiving students from the two district high schools. It had to compete for students and resources, and threatened to disrupt the high schools' operating procedures. As a result, most of the changes turned out to be in the innovative program itself. But the Perry-Parkdale school system was

Chart 35: Changes in the Organization During Implementation, at Carson, Perry-Parkdale, and Burton

Site	Salient Contextual Features	Scope of Intended Org. Change	Anticipated Organizational Fit	Difficulties/Problems	Underlying Issues	Org. Aspect	Org. Changes Noted	Scope of Change
Carson (innovation plus organizational change)	Cohesive, collab. climate in schools Innovative, humanistic HS principal Reform-oriented supt. Strong tech. assistance Influx of professions; w. high expectations Innovative, improving setting	District-wide: new roles for students, parents, teachers (elementary and secondary)	Varies: admin's see as good; early users/creators anticipated many org. changes req'd; later users see fit good, marginal shifts req'd	Complex, demanding, externally funded program Conflicting expectations re parent and teacher roles Teacher overload User uncertainty/resistance Teacher criticism of colleagues Gaining teacher endorsement of mandated change	Authority, coordination, accountability Role conflict, work load Work load, autonomy Power distribution	Structure	Creation/institutionalization of Mgt. Team to steer prog; role of coordinator New in-service comm.	Pervasive across district, but teacher use time is modest.
						Procedures	Redefining tchr role; more "batched", less individualized activities by coordinator Standardization of forms/procedures; load reduction, using substitutes, school dismissal	
						Climate	Norms supporting flexibility/colleagueship and more cross-sch'l interaction Higher expectations for tch'r influence; low morale when violated. Ambiguity re role of Mgt. Team. (early)	
Perry-Parkdale (organizational change only)	Heavy emphasis on external fund-seeking Glenn HS: receptive to innovations; both HS's support student options Charismatic cent. off. patron of innovation Availability of program-supporting funds Dist. developing state-approved career ed. prog.; needs HS portion still	Subsystem: a prog. (EBCE) receiving students pt. time from both dist. high schools	Reasonably good. Potential problems of loss of control over students; other oper. problems (see at right). But few demands on org.	Prog. takes kids out of reg. classes, electives Prog. requires space, transportation to jobs Loss of IV-C funds; principals resist use of their budgets Criticism of random student selection Complaints re grade inflation; work outside of school hours. Principal resistance to all-day time block Rescheduling of students who drop program	Competition for students Scarce resources Threat to counselor authority Maintenance of existing high school procedures Maintenance of student control	Structure	Faculty advisory comm. Space, transp. arrangements stabilized. Dist. funds for one staff member, summer. Student input shifts: alienated, low-performing 11th graders (oasis, dumping ground).	Some changes in program itself; prog. is new alternative feature of H.S. curric.; few changes in H.S.'s themselves. (largely isolated subsystem which must not be too successful, or will compete with regular program).
						Procedures	Credit, scheduling setup Reduction from full day to 4 hr. program. Special hall passes.	
						Climate	Prog. itself a "community"; no effects on high schools.	
Burton (little or no change)	New supt., many new programs; changes; curriculum overhaul Central office advocate has history of innovative effort One user with strong interest in law course, wish to make it more activity-oriented Board wants more active govt. instruction Advocacy of c.o. coordinator Outside funds "irresistible" Board pres. is police chief interested in law	Drop-in: social studies program, H.S., on political, legal, govt. processes (usable self-contained) out of school activity encouraged	Fair to poor: few problems exc. for trans., kids in comm.; might wipe out existing social studies program(2) tiny time blocks	Potential probs; students bring in community (risk, insurance, transportation)	Risk avoidance	Structure	None	No organizational impact.
						Procedures	Limited, "experimental" selective use of materials. No other org. changes	
						Climate	None. Non-collaborative, autonomous norms continue; ditto conservatism.	

BEST COPY AVAILABLE

also changed structurally and procedurally simply by the continuing presence of the work experience program, although there were few if any other effects on the district.

The Extent of Organizational Change

How typical was organizational change in our 12 sites? Table 17 provides a summary look.

Table 17: Extent of Organizational Change

		Have organizational changes occurred beyond the innovation itself?	
		Yes	Few or None
Is the innovation in place?	Yes	Carson Masepa	Plummet Perry-Parkdale Tindale Banestown Astoria
	Partially, or on limited basis		Calston Lido Burton
	No		Dun Hollow Proville

In only two of our sites, Carson and Masepa, could it be said that the innovation was in place on a reasonably full-fledged, wide-scale basis, with accompanying changes in the organization. For five more sites (upper right of Table 17), the innovation was being used thoroughly and extensively (recall that the innovation's use is itself an organizational change), but with few associated organizational changes. For the remaining five sites, there was not strong evidence of full implementation or associated change. On balance, we cannot say that the implementation processes we were examining had led to much organizational change beyond the specific innovations being put into place. Some illustrations from each of these three categories may be useful.

In Masepa, the innovation itself (eventually mandated for all teachers) transformed teachers' prior classroom practice substantially ("On balance, it's a complete change from what I was doing.") to an intensive, morning-long, integrated language arts program covering reading, grammar, spelling, composition and penmanship, which transformed the student role and teachers' required responses:

> There's no way not to be ready. The kids are waiting....they know exactly what they want to do. They'll ask for assignments (Teacher, Masepa)

And outside the classroom, the new language arts program led to substantial organizational changes: integrated scheduling for all grades 2-6 to permit cross-age grouping; tighter supervision ("On your evaluation form, you get docked if you haven't done everything."); and a good deal of mutual help among teachers:

> Teachers will come up to you at recess time and say, "Hey, I need thus and such". We share.
>
> We really do discuss things around here. You can get a lot of insight....People talk about what they are doing. (Teachers, Masepa)

In Tindale, a substantial new English course sequence was in place in both district high schools. It was aimed at the needs of low-achieving students, and was functioning well. The program required team-teaching from teachers who had only been used to self-contained classrooms. That affected relationships:

> The program banded together people who didn't like it. If a team didn't work out, you made enemies. If it did you made friends and improved relationships within the department. (Teacher, Tindale)

Teachers in the program were also closely monitored and evaluated; little deviation from the curriculum was permitted. Initially this led to a good deal of fear and mistrust:

> At inservices people looked at each other with distrust, but the "big brother" atmosphere kept people from even rolling their eyes at some bit of nonsense going on. (Teacher, Tindale)

But these changes (the fear and lack of trust were transitory, it turned out) did little to influence the Tindale high schools beyond the sheer fact of the program's presence in the organization. The program itself was a quasi-subsystem; most of the teachers in the program did not teach other courses.

In Lido, a teacher already engaged in teaching a marine science program was able with a principal's support to get materials and funds for a new forestry/ecology course, through adopting an NDN innovation on environmental education. But only parts of the materials were used, and the courses involved shifted in student input:

> The course is all floaters now. It has become a holding bin as far as guidance is concerned because they know Eric and I are worried about discipline. He gets the aggressors...I get the burnouts. (Teacher, Lido)

With the departure of the supportive principal, and the onset of budget cuts--organizational changes largely independent of the innovation---the users became discouraged about further innovation:

> My horse is tired, my saddle is slipping, and my lance is broken. I've applied for some industry positions, and I know I'm not the only one either. (Teacher, Lido)

There was little evidence that the program -- itself only partially implemented -- had induced any durable changes in the Lido district organization.

The Content of Organizational Change

Keeping in mind that organizational changes were not substantial in most of our sites, what sorts of changes took place? Chart 36 arrays them for inspection. Several things seem evident. First, transitory changes in structure are quite rare, and procedural changes are diverse and scattered. Second, transitory climate changes during the early part of implementation seem to be negative, as might be expected when an imperfectly-understood innovation with its associated structural and procedural changes encounters the existing order. Third, when we turn to durable changes, we note that the innovation itself is the most frequent form (5 sites) of structural change in the organization; in another 5 sites, no durable organizational changes occurred at all, as we saw in Table 17. We should note in passing that in 4 of the 5 sites where no durable organizational changes occurred, there were also no structural changes, even transitory ones, though there were sometimes transitory procedural and climate changes. Evidently changing organizations means changing their structure. The fifth no-change site (Proville) had only one structural change (a new project director) which proved transitory.

Expansion to new users and scheduling shifts appear in three sites. The remaining changes involve new roles (ex: helping teacher), new groups (ex: advisory committee), and physical space. Fourth, the most frequent durable change in the innovation itself* from a structural point of view entails changes in the population of students. We have already illustrated this in the Lido case; it's of more general

---

*On pp. 215-248 we have examined changes in the innovation itself in a good deal of detail. Here we emphasize primarily those innovation changes that have strong organizational relevance.

Chart 36: The Content of Organizational Changes *

Type	Transitory Changes		Durable Changes	
of Change	Within the innovation	In the organization	Within the innovation	In the organization
Structure	Addition of project directorate Evolving departments Creation and dropping of advisory committee	Change in locus of control, funding, and supervision	Shift in student input (5) Reorganization: more department interdependence Advisory committee Team teaching	Innovation itself (5): remedial lab, alt. school work experience program, English curriculum, accountability system None (5) Scheduling (4) Expansion of innovation to new users (3) Space for program (2) Creation of coordinator role Creation of management committee Creation of in-service committee Summer-school version of program added Increased team teaching Creation of helping teacher role
Procedures	Active, coercive student recruiting Leadership providing support (emotional, material) Leader "consultation" with teachers Non-users help users with testing Aides, parents help with instruction Increased community contact.	Innovation lapsed, is discontinued Field testing of materials Teachers exchange books Other instruction displaced	Tighter supervision, control (2) Student "batching" Routinization of forms/ procedures Charismatic leader more distant Fewer staff meetings Reduced student time in program Staff reassignment Selective use of materials.	Innovation itself (5): pupil screening, referral/intake, teaming, pullout procedures More paperwork (2) Added student transportation (2) Teacher load reduction Freeing time: substitutes, early dismissal Dropping letter grades More coordination among teachers More teacher discussion of individual students Specialist consultation for individual students Loss of teacher control over student assignment
Climate	Conflict (4): in teams between users, users-aides, departments. More cohesiveness (2), pioneer spirit, esprit User resentment (2) Less cohesiveness Tension, fear, mistrust	User-non-user conflict (2) User resentment of remedial lab Ambiguity about management committee Expectations for more upward influence violated, lower morale Resistance by principals, then support	Discouragement, burnout, loss of interest (3) Collaborative, help-giving climate (2) Cohesiveness (2) Less cohesiveness Overload Development of friendships/ enmities	Resentment re paperwork (2) Wariness about innovation More openness to innovation Norm change: flexibility, colleagueship, el-sec. interaction None: climate still good None: climate still bad More administrative awareness of the innovation

*Each item represents a change occurring at one site. Changes occurring in more than one site have numbers appended.

interest that the other four cases also involved shifts toward recruitment or selection of lower-ability students:

Site	Initial student population	Later population
Perry-Parkdale	Cross-section	Working class, alienated (turned off from school)
Plummet	Hard-core dropouts	Special education population; those wanting an "alternative"
Tindale	Low ability/ underachieving	Increased proportion of low-ability students in 2 high schools
Banestown	Under-achieving middle-ability	Lower ability, then a shift to younger students
Lido	Cross-section	Alienated

These shifts came in part from the fact that the innovations were either directly aimed at low-ability groups, or were explicitly designed as alternatives to the conventional program; several had especially-compassionate and supportive staff. On all counts, they tended to become a blend of a dumping ground and an oasis.

In some cases the shift occurred because of "unrelated" changes, like the power struggle in the Banestown central office, which dictated the shift of the remedial lab's population toward younger students.

A fifth comment on Chart 36 is that durable procedural changes are quite diverse. The tendency of the within-innovation changes, as we have seen earlier, is clearly toward energy reduction and simplification. That, perhaps, represents the dark side of routinization, appearing as the energy and excitement of the temporary implementation system wears off. Finally, the durable climate changes continue to be cast in good-bad terms, but the balance among them has shifted, so that collaboration, cohesiveness, and support now outweigh discouragement, resentment and enmity -- though the latter climate changes are by no means absent.

We have only two sites where anything like a meta-level, or second-order, shift has occurred in attitude to innovation itself. One is positive:

> At the central office level, the program is seen as a prototype, as a "springboard" for other classroom-based programs in remedial reading using individualized instruction and criterion-referenced testing. (Banestown site report)

This view was in part held from the beginning of implementation in Banestown, but was certainly deepened by the experience.

In another site, attitudes toward future innovation became more wary:

> If we were to get involved with another program, I'd become more involved so that I could be in a better position to agree or disagree with teachers, or to say to the county office, "It's off. Something's wrong." (Administrator, Dun Hollow)
>
> It's possible they [administrators] won't want to take a chance on another program. (Teacher, Dun Hollow)

Such shifts are often assumed to flow from innovative programs: excitement and benefit supposedly induce favorable attitudes to school improvement, etc. — or poor experiences deepen school people's cynicism and future resistance. It is easy for school-improvers to slip into implicit "magnification" of the potential impacts of their work, forgetting that life in schools goes on in its intense way, absorbing this or that specific innovative project with minimal disturbance. (Note, for example, that Louis et al. (1981) found that a well-run, comprehensive program for getting schools to utilize new products was successful in doing that, but failed to teach the schools to do routinely better problem-solving about the utilization of future products.

So, while meta-level attitude shifts may have occurred in our sites, they are only rarely noted in our site reports. Other sorts of organizational changes are occurring that might represent "capacity" increases: new roles, new groups, more student-focused procedures, supportive climate shifts. But we should remember that, by and large, such changes are limited to six of our 12 sites, and are prominent in only two.

What May be Causing Organizational Change?

We wished to understand what might be causing -- and blocking --organizational change in our twelve sites. To do this, we examined data for each site on a series of potentially explanatory factors which appear in two general domains: the pre-existing contextual features of the schools and their districts, and features of the implementation process itself.

Contextual features. Here we examined eleven factors, as follows:

1. Environmental pressure: the degree to which local communities or state agencies were exerting influence relevant to the innovation.
2. Demographic changes: shifts in community population and/or student input.
3. Needy student population: presence of students with unsolved needs for which the innovation was a potential solution.
4. Innovative history: whether district and building-level actions in the past were generally favorable or not to school-improving change efforts.
5. Superintendent orientation: general operating style;level of activity; and endorsement of the innovation.
6. Board attitude: whether Board was traditional or progressive, and supportive of administrative initiatives or not.
7. Fund-seeking history: district's past success in attracting outside funds.
8. Salience of program funds: how important or central the innovation-associated funds appeared to be in the case of this innovation; size of funding.
9. Motivation for adoption: whether the innovation was chosen for opportunistic or problem-solving reasons.
10. Central office advocates: whether district office persons existed who supported the innovation energetically.
11. Climate of school: whether building level norms favored collaboration and support, or isolation and low interdependence.

Chart 37 displays the data for each of our twelve sites, which are arranged in three categories of decreasing magnitude of organizational change; within each category, decreasing magnitude also applies.

Chart 37: Contextual Features as Predictors of Organizational Change

	1. ENVIRONMENTAL PRESSURE	2. DEMOGRAPHIC CHANGES	3. NEEDY STUDENT POPULATION	4. DISTRICT INNOVATIVE HISTORY Dist.	4. DISTRICT INNOVATIVE HISTORY Bldg.	5. SUPT. ORIENTATION (Style, attitude to the innovation	6. BOARD ATTITUDE	7. EXTERNAL FUND-SEEKING HISTORY	8. SALIENCE/ SCALE OF PROG. FUNDS	9. MOTIVATION FOR ADOPTION	10. CENTRAL OFFICE ADVOCATES	11. CLIMATE OF SCHOOLS
Innovation in place, organizational changes												
CARSON (IV-C)	Mod.	More professionals	—	Past: low Recent: high	Mod./ high	Reformist, +	Supportive, progressive	Little done*	Low $96K	Problem-solving	Present (supt)	Collaboration, cohesiveness, tolerance
MASEPA (NDN)	—	—	Many Title I children	High, pro-active	Mod.	Supt: distant Asst. Supt.: active	Supportive, progressive	Successful*	Low or none *30-50K	Problem-solving	Present	Collaboration, cohesiveness, tolerance
Innovation in place, few organizational changes												
PLUMMET (IV-C)	High	More inner-city students	Hard core offenders, dropouts	Mod.; felt needs for improvement	N/A	(MD), +	Supportive, progressive	(MD)	High $300K*	Problem-solving	Present	N/A
PERRY-PARKDALE (NDN)	Low/ mod.	—	—	Mod./high	One high, one mod.	Entrepreneurial, 0	Supportive, (MD)	Active, opportunistic, successful	High $300K	Opportunism; some problem-solving	Present	1-Collaboration 1-Isolation
TINDALE (IV-C)	—	More low-ability students	Many low-ability students	Low	Low	(MD), +	Supportive, middle-of-road	Selective, cautious re fed. funds	Low/mod. $87K	Problem-solving	Present	1-Isolation 1-(MD)
BANESTOWN (NDN)	Mod.	—	30% Title I population	Low	Low	Weak-distant, +/-	Conflictful, progressive/ conservative mix	Little done currently*	Low/mod. $5.6K	Problem-solving	Present	Isolation, some diversity tolerance
ASTORIA (NDN)	—	—	—	Low	Low	(MD), +	(MD), (MD)	N/A: ineligible for public funds except Title I.	None $0	Problem-solving	Present	Collaboration, cohesiveness
Limited use of innovation, no organizational change												
CALSTON (NDN)	—	More mixed population, more Latinos	More students requiring individualization	Mod.	Mod./ low	(MD), (MD)	(MD)	Active, successful	"High" $0 (inservice, materials provided)	Problem-solving	Present	Isolation
LIDO (NDN)	—	—	—	Low	Low/ mod.	"Lame duck", restrictive, -	Active, not always supportive, (MD)	Selective, cautious re fed. funds	High $6.1K	Opportunism/ problem-solving mix	Absent	Isolation*
BURTON (NDN)	—	—	—	Past: low Rec: mod/ high	Low	Active, change oriented, +	Supportive, progressive	(MD)	High $3.1K	Problem-solving	Present	1-Collaboration 2-(MD)
DUN HOLLOW (IV-C)	—	—	—	High	Mod.	(MD), +	Indifferent, traditional	(MD)	None $0	Opportunism	Absent	1-Isolation?* 1-(MD)
PROVILLE (IV-C)	Low/ mod.	—	—	Mod./ high	(MD)	Power-oriented, +	(MD) Conservative	Active, opportunistic, successful	Low, originally, then mod. to high $180K	Opportunism	Present	(MD)

-- = not salient in local context

(MD) = missing data

*Inferred/estimated from site report

N/A = not applicable

These factors were chosen in the first instance through inductive examination of the arrayed data for our twelve sites. But it is no accident that a number of them also appear in the larger study, and/or in prior studies (for example, the opportunistic/problem-solving dimension was noted by Berman & McLaughlin (1975, Vol. III). The reader will also note that several of the factors are not purely "contextual", but reflect the interaction of the local context with the prospective innovation: this is true for factors 1, 3, 8, 9 and 10. This is not surprising; as Downs & Mohr (1976) have pointed out, the proper unit of study in an inquiry like ours is not the local setting, or the innovation considered separately, but the innovation-organization pair.

Now, let us review, column by column, the data in Chart 37 and see what conclusions are possible about the effects of context.

1. Environmental pressure. There are only five sites where environmental pressure is reported to be a salient contextual feature; they are somewhat more likely to be sites which experienced organizational change to some degree. In Carson, the influx of professionals to the rural community brought increased expectations for the schools, even pressure for reform. At Plummet, the forces were even more powerful: loss of state revenue because of dropouts; overload on the city's juvenile justice system; and presence of strong community advocates for an alternative facility for "hard-core" students. At Banestown, the forces were more distal, coming from the state department of education's accountability pressure, which meant more monitoring of schools and an accelerated search for new programs. Perry-Parkdale was required by the state department of education to develop an approved career education program, but that pressure did not seem acute. The external pressures in Proville, though local, were not acute either; the recession was reducing the number of jobs outside the district available for students, and the high-technology em-

ployment environment made for a shortage of cheap labor for within-district jobs, which the proposed program could readily fill with students.

On balance, we might conclude that environmental pressure for change may have had a part in predisposing districts toward innovations which would eventually lead to organizational change, but the case is not very compelling. For example, Masepa, with its fairly substantial organizational changes, was not under much environmental pressure (though it did have community support, and a regional tradition of "progressivism" as backdrops, the Masepa effort seemed to be driven as much by central office and principal energies and a positive climate for innovation, as by external pressures). Similarly, the modest organizational changes at Astoria and Tindale seemed more driven by the central office's initiatives (and, in Tindale, by student demographic shifts) than by the external environment.

2. Demographic changes, and 3. Needy student population. We can profitably discuss these two predictors together. They are in effect another form of environmental pressure, showing up in student inputs. Generally speaking, it appears that if a district experiences demographic shifts, and/or has a specified, needy student sub-population for whom the innovation might be appropriate, organizational change is more likely (5 of the 7 organizationally-changing sites have these properties, and only one of the low-changing sites does so). (In fact, note that Calston, of the no-change sites, was implementing more of the innovation than the others.) The sheer presence of poorly-achieving (Title I or other) student populations was important in Masepa, Tindale, Banestown, Plummet, and perhaps in Calston (though the population there was gently characterized as "mixed"). Perhaps all this is obvious: schools are "supposed" to be for students. But much slippage is possible between the presence of a needy student population and the installation of a change which represents some actual organizational change (let alone impact on the students). We need to keep

examining other predictors.

4. Innovative history. Here we relied on interview data, and the results of the Building Work Climate questionnaire.* A look at Column 4 of Chart 28 suggests that innovative history is not a very strong predictor of organizational change: it is perhaps a necessary but not sufficient condition. While both of our sites (Carson and Masepa) with clear organizational change had moderate to high levels of recent innovation adoption and two of the modestly-changing sites (Plummet and Perry-Parkdale) have a similar history, the picture from there on in Chart 37 is mixed.

Three of the five modestly-changing sites (Tindale, Banestown, Astoria) had low innovative histories, both at the district and the building level. But in sites with limited innovation use and no organizational change, the picture does not support the idea that district and school innovative history will predict organizational change. In Calston, we note a moderate history; in Burton we note much moving and shaking at the district level (perhaps blocked by traditionalism at the school level?); in Dun Hollow, the district was purportedly "the most innovative in the county", with a moderate history of new programs at the school involved; and at Proville there was a moderate to high amount of new programs in evidence at the district level. Only Lido and perhaps Calston fit our prediction. Clearly other factors are at work. One possibility is the idea of opportunism; the Proville program development work seemed largely driven by fund-seeking behavior and the need for maintaining the central office staff (as a teacher commented:"We just don't see the money. Everything is scrambled topside.") The Dun Hollow pilot of new materials occurred because the district superintendent wanted to maintain good relations with the powerful intermediate unit which had sponsored their development. (More on opportunism shortly.)

---

*Some illustrative results: at Carson, where the elementary school was rated by us as "moderate to high" in innovative experience, 42% of teachers said the level of adoption of new teaching practices and materials was "average" compared to other schools, and 58% said it had been "high". At Tindale, judged by us as "low", 48% used the "low" category, 42% "average", and only 9% "high".

Perhaps more economically, all of the programs except for Proville were "drop-in" ones with minimal organizational demands. It may be that programs of this sort will induce little organizational change regardless, and past innovative history is simply irrelevant. Conversely, programs that are potentially organization-changing (subsystems or district-wide programs, as in Carson, Masepa, Plummet, Perry-Parkdale) seem to require at least a moderate innovation history. Only Tindale is an exception.

The moderate degree of organizational change noted in Tindale may stem from the need to respond to environmental pressure, the influx of low-ability students, the district's prior use of locally-developed curricula, and the strong commitment and power of the central office advocate. All these features meant that a program with moderate organizational impact could get into place, even though attitudes toward "innovation" were not particularly positive.

5. Superintendent orientation, and 6. Board attitude. Here too it seems sensible to discuss together the stances of those in the upper regions of the systems we were studying.

Once again, except for our changeful sites, Carson and Masepa, the picture is one of only moderate support for these items as predictors. In those sites, reformist, vigorous superintendents (or surrogates, as at Masepa), and a supportive, progressive Board are at work. With less certainty, the modestly-changing sites seem to have superintendents whose style is not mentioned in the site report, but whose endorsement of the innovation is positive, along with (in Plummet, Perry-Parkdale and Tindale) a reasonably supportive Board ("supportive" meaning willingness to endorse administrative positions and policies). In the no-change sites, we note for Lido, Dun Hollow, and Proville that there is either a non-endorsing superintendent, a traditional or non-supportive Board, or both. Burton is a deviant case: the superintendent is active, change-oriented, even Machiavellian (introduces changes ranging from a management-by-objectives program to mandatory homework to rotation of administrators into new positions, saying "our greatest enemy is social inertia"), and the Board is supportive/progressive. Here too we might speculate that since the innovation involved is small-scale (drop-in) in intent, larger contextual features of the superintendent's and Board's style do not matter as far as organizational change is concerned.

7. External fund-seeking history; 8. Salience of program funds; and 9. Motivation for adoption. Next we turn our attention to these three columns of Chart 37. To what extent do districts' past track records in obtaining external funds (outside their local communities) make for more eventual organizational change? How salient is the existence of external funds? And do opportunistic as vs. problem-solving motivations for proceeding with the project predict eventual organizational change?

Fund-seeking history as such (col. 7) seems to show little pattern: aggressive fund-seekers and those with suspicion or disinclination to attract external funding are found in all organizational change categories. Our sites ranged widely on this dimension. Perry-Parkdale garnered nearly 25% of a $53 million budget each year from various "soft money" sources, with a resultant bent toward opportunism. Other sites were selective and cautious: the Lido superintendent said Federal dollars were "dangerous because they are fluid"..."we don't do programs just because Federal money is available"; a Tindale policy was "no special frilly Federal programs are sought simply to gain Federal dollars". And at some sites external fund-seeking was simply atypical (Carson).

Perhaps the issue is more whether external funds were *salient* or not in the decision to proceed. At first glance there seems little order in column 8, but if we combine it with column 9, *motivation for adoption*, some regularities appear,* It is quite apparent to begin with, that the high-changing sites were those where external funds were not especially salient, and problem-solving motivation was strong; at Carson there was interest, even passion directed toward the innovation *before* funds were actively sought.

We can also see in the five modestly-changing sites that problem-solving was largely typical; even at opportunistic Perry-Parkdale, the need to develop a "capstone" for the existing career education program was strong. And we can see that for those sites with more organizational change, salience of the funds (and their dollar amount) was larger. (Once again, we have to invoke the idea of the scale or scope of what was being attempted: the Plummet alternative school, the Perry-Parkdale EBCE program, and the Tindale curriculum for low-achieving adolescents were just *bigger* than the Banestown remedial lab or the Astoria readiness-assessment program.)

---

*We should note that deciding whether an adoption is "problem-solving" or "opportunistic" is not the simplest of tasks. We settled for "problem-solving" orientation when it appeared that potential adopters really did have a problem in mind that was connected to the essence of the innovation as such (for example, Calston's severe reading problems and the properties of the Matteson 4D reading program), and "opportunist" when other, often equally urgent issues were at stake (for example, the Dun Hollow superintendent's need to stay on the good side of the intermediate unit that had developed the innovation, or the Proville superintendent's wish to promote a loyal supporter into central office administrative ranks using the vehicle of district *and* external funds).

In the non-organizationally-changing sites, we note more opportunism, and/or funds salience (even though, except for Proville, the scale of the innovations and the size of funding are small). The Proville brand of opportunism was perhaps the most extreme of any we encountered:

> Those who aspire to administrative ranks were commonly referred to as the "fair-haired boys". Typically, one is "brought into" the district office by a "friend"..."getting along" and "showing a 1000% loyalty" appear more salient than organizational effectiveness.
>
> Tweed [the superintendent] is referred to as the "godfather"...He was said to display a passion for soft money positions...so as to more easily move people in and out of jobs. People are described in terms of their relationship to Tweed: one is or is not a "Tweed man".
> (Site report)

Proville administrators bragged that their success rate for getting state IV-C grants was 77%, the best in the state. But that penchant is not the key issue: even entreprenurial Perry-Parkdale cared to some degree about the program they were seeking funds for, and on a smaller scale, the Calston district was acknowledged to be the best in the entire city at getting extra funds. But the reading program they chose brought them no dollars at all, just materials and in-service assistance that were precious, given city-wide budget cuts.

So, the moral of columns 7 through 9 may be: organizational change is more likely when problem-solving orientation is strong, and when the scale of the innovation is large enough to deserve substantial funding (say, $50,000 or more). Though throwing money at problems is not supposed to solve them, defining one's problem as solvable by a moderate (rather than minimal) amount of money may induce organizational change (IF opportunism is not the central feature of the quest).

10. Central office advocates. The striking thing about column 10 is that 10 of our 12 sites have central office advocates. Only in small-scale Lido, with its non-supportive superintendent, and in Dun Hollow, with

its ambivalent director of elementary instruction, does the innovation not have a friend in court. We conclude that we must look more carefully at what advocates do during implementation, or to other factors, to explain differential amounts of organizational change.

11. Climate. Finally, does the pre-existing climate of the adopting school make a difference in final degree of attained organizational change? A scan down column 11 suggests that it does: the two schools with clear organizational change are marked by norms supporting collaboration, cohesive relationships, and a reasonable tolerance of diversity. Two such cases don't make an explanation, however. It will be necessary to find that schools which show minimal or no organizational change had norms supporting isolation and low interdependence. That seems generally to be the case. What about the exceptions? At Astoria, the close working relationships were employed to implement the organizationally-demanding innovation in an adaptive way that protected the school from changing; the vice-principal, parents, and aides were mobilized to help avoid the disruption to regular classroom teaching that the mandated innovation would have caused. The deviant case among non-changing sites is Burton, where in one school of three there was reasonable collaboration, but no real organizational change. As the site report notes:

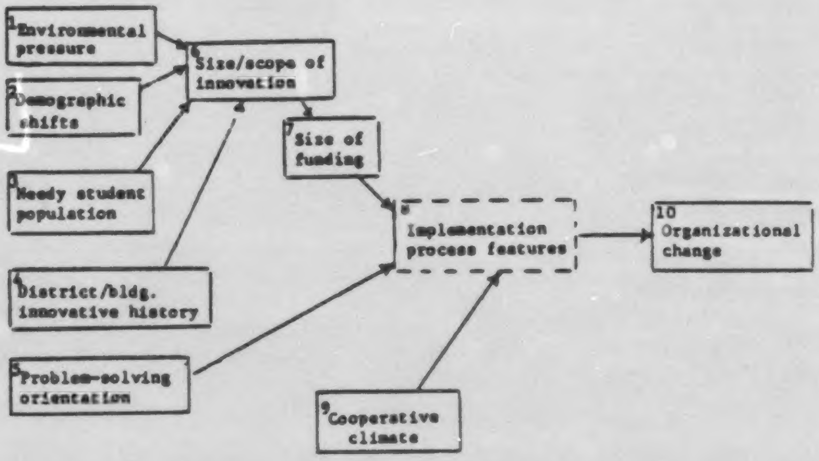
> With the possible exception of Mr. Joyce's high level of involvement with his law course and his desire to make it more activity-oriented, contextual factors within the buildings did not seem to play a part in the decision to experiment with this program.

(Joyce did not work in the building described by its principal as "cooperative".) And we should note" (a) all three schools at Burton were conservative in orientation; and (b) the innovation they were considering was not especially organizationally-demanding, and was made even less so through administrative latitude.

Summary. Reviewing what we have learned about the effects of organizational context on a column-by-column basis, it seems fair to say that organizational change is more likely in settings where the demographic mix has shifted recently, and where a "needy" student population exists; it is also possible that environmental pressure from external agencies leans schools toward eventually changing their structure. Prior experience with innovation, by itself, is not necessarily associated with larger degrees of organizational change, but if it is associated with a problem-solving rather than an opportunistic orientation, more change is likely. The superintendent's and Board's attitudes make a modest positive difference; the presence of a central office advocate is typical, but does not guarantee organizational change. More crucial is the presence of a problem-solving orientation, applied to a reasonably large-scale innovation, and supported by moderate funding. Finally, there is some evidence that a cooperative, cohesive climate makes organizational change a more likely outcome.

A preliminary causal map assembling these propositions looks like this:

Fig. 10: Contextual Features Causing Organizational Change


1 Environmental pressure
2 Demographic shifts
3 Needy student population
4 District/bldg. innovative history
5 Problem-solving orientation
6 Size/scope of innovation
7 Size of funding
8 Implementation process features
9 Cooperative climate
10 Organizational change

In effect, what seems to be happening is that environmental pressure(1), demographic shifts(2) and the presence of a needy student population(3) in a district with a positive innovative history(4) induce the choice of a more-ambitious innovation(6). Such innovations in turn require larger amounts of funding(7), which, *if* accompanied by a problem-solving orientation (5) to begin with, induces organizational change(10). A building climate(9) that is cooperative also seems to support organizational change. (But, funding, problem-solving orientation and climate do not change the organization directly; they must operate through a set of specific implementation process features(8), to which our discussion turns in the next section.)

To look at the low side: if problem-solving orientation(5) is weak(in effect replaced by opportunism), a situation that in our sites was also accompanied by low cooperation(9) at the building level, little organizational change occurs. The money obtained simply goes toward organizational maintenance rather than change. Or, further back in the diagram, if environmental pressure(1), demographic shifts(2) and needy student population(3) are low or lacking, the tendency is to choose a smaller-scale innovation(6), with small funding(7) and a smaller potential for changing the organization.

The implementation process. Background factors don't give us the whole picture. We need to examine possible causes for organizational change that come up during the implementation process. We identified twelve, as follows:

1. Scope of intended change: the size of the originally-conceptualized innovative effort. (This has already been alluded to above.)

2. Organizational fit: the degree to which the innovation was congruent with existing organizational arrangements:
   a) as anticipated before implementation;
   b) as noted actually, during implementation.

3. Administrative latitude: permission for users to adapt, alter, or selectively implement the innovation.

4. Administrative pressure: influence applied to induce implementation, exuding from central office personnel, the project director (if there is one), and the immediate school principal(s) involved.

5. Administrative support: help, assistance provided to users in aid of implementation (also from the three roles named above)

6. Organizational-level issues arising during implementation:

   a) Coordination: problems of linking, communicating, keeping parts of system coherently acting

   b) Autonomy: users' concerns about their own freedom of choice and action

   c) Work load: users' concerns about added activities required by the innovation.

   d) Existing structure: problems arising from the innovation's interaction with organizational structure or procedures (cf. actual organizational fit)

   e) Competition: issues involving win-lose struggle for scarce resources

   f) Conflict: other situations involving incompatible goals, usually accompanied by negative feelings

   g) Power distribution: issues where the established set of influence relationships (formal and informal) comes into question, is seen as inequitable or undesirable, etc.

Let's examine each of these in turn as predictors of organizational change, by reviewing Chart 38, next page.

1. Innovation size/scope. Our discussion of funding has already prefigured what we have to say here. A look at column 1 shows that there is a substantial range in size across the twelve sites--and that the variable, by itself, is a rather good predictor. Our two high-changing sites, Carson and Masepa, were both large-scope innovations. The ordering of sites by innovation size within the next category, from Plummet to Astoria, is almost identical with their ordering on net organizational change. And in the zero-change category, there is only one deviant case, Proville, which is useful as an outlier (more on this later). In general, the Proville failure seems to have stemmed, as we have seen, from opportunism, weak program design, heavy principal and user resistance, weak assistance, and high administrative latitude. But for 11 of our 12 cases, the general message is: more attempted, more gained.

Chart 38: Implementation Features as Predictors of Organizational Change

SITES, BY DEGREE OF ORGANIZATIONAL CHANGE	1. SCOPE OF INTENDED CHANGE	2. ANTICIPATED/ ACTUAL ORG. FIT		3. ADMINISTRATIVE LATITUDE	CENTRAL OFFICE		PROJECT DIRECTOR		PRINCIPAL		6. ISSUES ARISING DURING IMPLEMENTATION						
		Antic.	Actual		4a. Pressure	5a. Support	4b. Pressure	5b. Support	4c. Pressure	5c. Support	Coordination	Autonomy	Workload	Existing Structure	Competition	Conflict	Power Distrib.
Innovation in place, organizational changes																	
Carson (IV-C)	Large	Mod.	Mod/ good	Mod	High	High(to steering group, not users)	Mod.	High	1. (HS) high 2. (El) mod.	High High	✓	✓	✓	—	—	—	Ambiguity, violation of heightened exp.
Masepa (NDN)	Large	Good	Mod/ good	Low	High	High	N/A	N/A	High	High	✓Problems of consistency	✓	✓	✓user/ non-user sched.	—	✓̇ user/ non-user friction	—
Innovation in place, few organizational changes																	
Plummet (IV-C)	Large	Good	Dist. good; students, poor	High	Low	Mod.	Mod/ high (School Dir.)	High	(MD) (sending high-schools)	(MD)	✓	—	✓	—	—	✓inter-dept., within school	—
Perry Parkdale (NDN)	Mod.	Mod/ good	Mod.	High	Mod.	Mod..	Mod.	High	Schl 1: Neg. Schl 2: None	None None	—	—	—	✓ threat to couns. auth., HS proced.	✓ for studts, jobs, curric.	—	—
Tindale (IV-C)	Mod/ large	Good/ mod.	Mod	Low	High	Low	High (Dept.	High chairs)	None	None	—	✓ Shift to teaming	—	—	—	✓ within teams	—
Banestown (NDN)	Small/ mod.	Mod.	Mod.	High	High	High	N/A	N/A	Low	Low/ mod.	✓ (lack of)	—	✓	✓̇ schedlg space, staffing	✓ for power in cent. office	✓	✓ cent.off. vs.tchrs; cent.off struggle.
Astoria (NDN)	Small	Poor	Good	High	High (mandate)	Mod.	N/A	N/A	Mod. (vice-principal)	High	—	—	✓	—	—	—	—
Limited use of innovation, no organizational change																	
Caloton (NDN)	Small	Good/ mod.	Poor	Mod/ high	High	High/ mod.	N/A	N/A	Schl 1: Mod. Schl 2:	Mod. Mod/ low	—	✓	✓	✓̇ reg. readng prog.	✓ for resources (books)	✓ betwn 2 users	✓̇ non-users' loss control of grouping
Lido (NDN)	Small/ mod.	Good/ mod.	Mod.	High	None	None	Mod (Dept.	Mod./ high chair)	1st: Mod Following: low	High Low	✓ trans., schedlg	—	—	—	—	—	—
Burton (NDN)	Small/ mod.	Mod/ Poor	Good	High	Low/ mod.	Low	N/A	N/A	None	None	—	—	—	—	—	—	—
Dun Hollow (IV-C)	Small	Good/ Mod.	Poor	Mod	Mod.	None	High (developer)	Low	Low/None	None	—	—	✓	✓̇ reg. soc. studies program	—	—	—
Proville (IV-C)	Mod.	Good/ Mod.	Mod.	High	Mod/ high	Mod. (sup't)	High (Cent. Off. Mgr.)	Mod/ low	Mrg.	Low	(lack of) ✓̇	✓	✓	✓̇ schedlg.	✓̇ for class time	—	✓ princ. vs. cent.off.

N/A = not applicable

(MD) = missing data

✓ = present, salient
✓̇ = present, less salient
— = not salient

BEST COPY AVAILABLE

2. Organizational fit. To what degree did the innovation look to respondents, and to us as site researchers, like a good or poor fit with the existing organizational structure and procedures? This was assessed at the (recollected) point of adoption, and during implementation itself. Column 2 of Chart 38 shows us that in all sites but Astoria, good to moderate fit was anticipated; in effect, school districts don't "look for trouble" in choosing innovations, it seems. Recall that the Astoria "adoption" occurred because of a system-wide mandating of the EPSF innovation, which was indeed inappropriate for the student population in Astoria, and would interfere considerably with existing curriculum, teaching methods, and time use. As we shall see, the immediately-chosen palliative for this situation was that of allowing considerable latitude during implementation: the net actual fit turned out to be good.

Column 2 shows us something else: for only one site (Banestown) was actual fit the same as that expected. For most others, actual organizational fit was poorer. For some (Proville, Tindale, Lido, Perry-Parkdale, Masepa) the difference was only a half-step, but for others, it was more substantial. In Calston, the reading program that the central office coordinator and principals thought would be a simple drop-in supplement to the existing city-wide reading program turned out to involve competition for resources (other schools had to give up precious reading materials), and reduced non-using teachers' decision powers over student grouping. And it turned out that "supplementary" actually meant "extra" as far as teachers were concerned. At Dun Hollow, another drop-in program "simply" involved field testing of new social studies materials on Eskimos. But the materials were so incomplete that excessive teacher work time was involved, and the Eskimo work actually displaced other social studies content, to teachers' distress.*

These five cases suggested a tendency to deny/avoid possible organizational fit problems—the "Scarlett O'Hara" effect again. Proville's work experience program, if fully implemented, would have substantial organizational change-stresses; it would shift the roles, time use and reward systems for students, vocational education teachers, and school district classified employees. But the scope of the program seemed unaddressed in the planning and early implementation. As it turned out, there were substantial problems: of 281 eligible students, only 16 had schedules that permitted their participation; principals were angry and cynical ("Just another dumb program they're shoving down our throats"), and vocational education teachers were furious:

> I just about threw the guy [coordinator] out. He actually insisted he was going to take students out of my class. I told him he couldn't have them. (Teacher, Proville)

There were three cases, however, where organizational fit was less of a problem than anticipated. In Carson, the comprehensive individual-counseling/ development program worried its early users, who thought substantial changes would be required in the way things were done. But after three years of increasingly-routinized (and simplified) operation, fit problems were minimal. In Burton, the new legal education program would have meant scheduling problems, and much student activity in the community. But the central office advocate's willingness to let teachers pick and choose the aspects of the IPLE program they felt like using minimized difficulties; as it turned out, not one of the users tried community activities, a component of the innovation the developer regarded as "essential". We have already noted how innovation-change and "flexible" implementation solved the potentially serious fit problems at Astoria.

---

*Plummet is a special case. Its actual fit with the high school sending district was good. Its fit with the actual incoming student population turned out to be poor; the curriculum and materials were simply inappropriate, a problem which set off strong (and eventually successful) revision/reorganization effort.

On balance, however, the fit issue as such does not seem to be a strong predictor of eventual organization change.

3. Administrative latitude. By itself, latitude seems to predict organizational change mainly at the ends of the organizational-change scale; for the sites from Calston to Proville, moderate to high latitude for a small-scope innovation practically guaranteed zero organizational change. And for the larger-scale innovations at Carson and Masepa, latitude was moderate to low. But administrative latitude was so typical at the modestly-changing sites, except for the vigorously-enforced Tindale reading curriculum, that we don't have much predictive power in the mid-range.

4. Administrative pressure. To what degree did administrators in the central office, or working as project directors, or at the building level, exert pressure for implementation, either of the "strong-arming" or exhortational variety? The general picture, as we saw earlier, is that a good deal of central office pressure is being exerted: only at Plummet do we hear a user say,

> Mostly, I've been happy for the lack of interference, the fact that we've been allowed to operate autonomously. We've been allowed to experiment.

(We should note here that (a) the Plummet staff was highly committed to the alternative-school enterprise they were running, and (b) they were receiving moderate to high pressure for implementation from their immediate superior — the school's director.)

Secondly, where project directors exist (all IV-C programs plus Perry-Parkdale and Lido), they, quite naturally, exert moderate to high pressure for implementation. That is supposedly what project directors are hired to do. But when we get to principals, the picture is quite different. Only in high-changing Carson and Masepa do we get high principal pressure for implementation. There's moderate pressure in Astoria (to implement the revised, cut-down version of the innovation), in Calston, and initially at Lido. But elsewhere, the principal is providing only low pressure (Banestown, Dun Hollow, the new principal at Lido), none at all (Perry-Parkdale, Tindale, Burton), or is more or less visibly opposing implementation (the other school at Perry-Parkdale, Proville).

A cross-role look at the issue of pressure suggests that for moderate to large-scale innovations, pressure is needed at at least two of the three levels (central office, project and principal) in order for organizational change to occur. The only exception in six cases is Proville, where the negativism of principals may have succeeded in cancelling pressure from above. For small to small/moderate innovations,failure to touch two of the three bases results in almost no change at all (Burton, Lido, Banestown), and even where pressure is present at two of the three levels (Astoria, Calston, Dun Hollow) the organizational changes are minimal because the scope was minimal to begin with.

5. Administrative support. The question of support presumably interacts with that of pressure. Here we define support rather broadly as all assistance efforts except control (see p.157); teaching/training, facilitation, solution-giving, resource-adding, advocating users' interest, feeding back formative data, and supporting/encouraging.*

Generally speaking, we note central office support levels are high to moderate (8 sites), sometimes low (2) or absent (2); those of program directors moderate to high (except in our zero-change sites Dun Hollow and Proville);

---

*Control was also defined on p.157 as a type of assistance, but we have broken it out separately here under the heading of "pressure".

and those of principals high only at high-changing Carson and Masepa (and at cooperative, conscientious Astoria).

We should take a moment to note that the conventional wisdom that identifies the principal as the main supporter or blocker of change efforts is cast into doubt in our sample. While substantial organizational change did require principal pressure and support in both Carson and Masepa, the moderate organizational changes in Perry-Parkdale, Tindale, and the minimal changes in Banestown proceeded essentially without the principals' being on board. In Perry-Parkdale and Banestown the innovation was isolated, sealed off to some extent from the normal flow of the schools involved. In Tindale, the high school principal's role simply was defined as having nothing to do with curricular matters. And it is almost a toss-up in our non-changing sites whether the principal's essential absence from the change picture was more or less critical than the fact that the changes were small-scope to begin with, or the associated fact that latitude was typically high.

Looking across roles, we can see that organizational change is most likely when there is strong support from at least two of the three levels; that the picture for sites with successful innovation but modest organizational changes shows that moderate to high support from one to two levels is necessary; and that zero-change sites (except for Calston, at the top of that array) typically have minimal support. We also see here another explanation for the Proville debacle: support was minimal at both the project director and principal levels. (The combination of high pressure and low support seemed particularly resented by users, not only at Proville, but at one Calston school and at Dun Hollow.)

One other note: considering pressure and control exerted close to the programs involved, it appears that for moderate to large innovations, a combination of moderate pressure and high support (Carson, Plummet, Perry-Parkdale, Astoria, early Lido) is more typically associated with successful implementation (and, for larger innovations, organizational change). Only Tindale departs from this pattern, and the high pressure for implementation present there had its side effects, including a "big brother" atmosphere:

> You don't criticize his [central office advocate's] program and expect to survive here. (Teacher, Tindale)
>
> You go where you're safe and secure first [to peers] to gripe and complain. (Teacher, Tindale)

6. Issues arising during implementation. The issues noted in columns 6a through 6g of Chart 38 emerged inductively from the site analyses. We wondered whether any of them, or any combination, might be predictive of organizational change. Two generalizations seem founded.

First, the sheer number of organizational issues arising during implementation seems a function of the innovation's size/scope; the moderate to large ones average 3.1 issues, and the small, small/moderate ones 2.2. For one deviant case, there is the moderate-to-large change at Perry-Parkdale, where the smoothly-functioning program had few internal issues, and only had to contend with issues in its environment: competition for students ("Students are jobs."), resources, and space in the curriculum, and threats to existing high school procedures. The other deviant case is the tightly-managed Tindale project, where the only problems were those within newly-implementing teams.

For small-scale innovations, there are also two deviant cases. Calston, the most-changing of our "least-changing" group, ran into unanticipated "fit" problems ranging from the loss of autonomy involved in giving up valued books to overload ("there was just too much to do at the same time") and loss of decision power over student allocation. The numerous problems at Banestown seemed to stem mostly from the intra-central office competition and conflict, and resulting coordination difficulties.

A second possible conclusion is that issues involving coordination, autonomy, and the relation of the innovation to the existing structure appear somewhat more frequently as salient issues when a program is on the way to inducing organizational change of some degree: see the cases of Carson, Masepa, Plummet, and Perry-Parkdale, comparing these with all other sites.

But beyond this, there seem to be few organizational-issue correlates of final change; matters of work load, competition, conflict, and power distribution appear in high, modest, and zero-changing sites alike. The variables discussed prior to this region of Chart 38 seem more crucial.

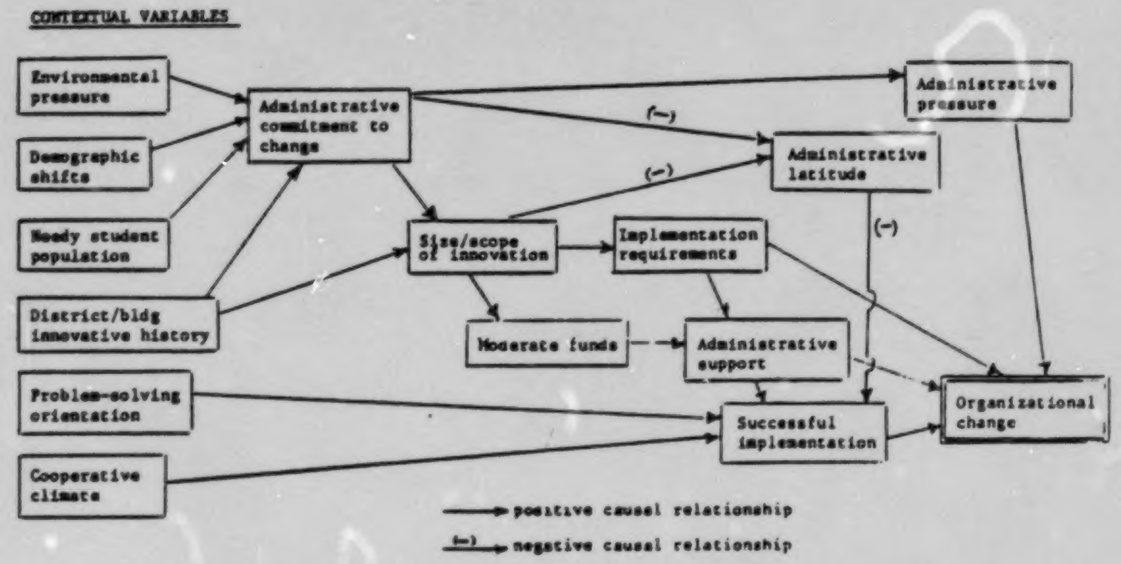
Conclusions

In brief, we have learned in this section that innovations of larger size/scope are more likely to induce organizational change; that administrative latitude tends somewhat to reduce such change; that both administrative pressure and administrative support (typically from at least two mutually-reinforcing levels) are needed (though the principal need not be the source); and that moderate pressure and high support from assisters close to the action (either as project directors or principals) seems an optimal balance.

How do these predictors affect the causal diagram we began earlier? Fig. 11 suggests a revised model that incorporates our findings.

Our explanation proceeds as follows. As we saw earlier, environmental pressure, demographic shifts, and a needy student population are associated with choice of a larger innovation. But how do they do this? We assume that they

Fig. 11: Contextual and Implementation-Process Features Causing Organizational Change


CONTEXTUAL VARIABLES
Environmental pressure
Demographic shifts
Needy student population
District/bldg innovative history
Problem-solving orientation
Cooperative climate
Administrative commitment to change
Size/scope of innovation
Moderate funds
Implementation requirements
Administrative support
Successful implementation
Administrative pressure
Administrative latitude
Organizational change
(–)
(–)
(–)
positive causal relationship
(–) negative causal relationship

operate through heightened administrator commitment to change, which is also boosted by past innovative history; innovative history also increases the likelihood that larger innovations will be chosen.

Once a larger-scale innovation is chosen, its heavier implementation requirements (*vide* the larger numbers of implementation issues we have noted) dictate the need for greater administrative support to users; that support is also aided by the presence of the moderate funds which typically go with larger innovative projects. Administrative support (aided by pre-existing problem-solving orientation and cooperative climate) tends to result in reasonably full-scale, successful implementation; that, and the actual implementation requirements themselves, bring about organizational change. Such change, however, also seems to require administrative pressure, stemming from administrative commitment.

It also seems clear that when administrators have lower commitment, administrative latitude[*] is typical; latitude tends to result in less-complete, less-successful implementation, thence lesser organizational change.

If a smaller-scale innovation is chosen, that also seems associated with more administrative latitude; the resulting weaker implementation, along with the brute fact of smaller innovations' minimal implementation requirements make for fewer organizational changes.

There are two cases for which the "latitude" aspect of the model does not fit very well: Plummet and Perry-Parkdale, where there was relatively high latitude, but successful implementation. Both were relatively isolated subsystems within their districts, and it seems likely that, once the basic policy decision to implement them had occurred, the distal and local administrators provided latitude for a committed, professionalized staff to "do its thing" in the best way they knew how. So we must invoke for these cases one or two extra variables, something like "environmental buffering" and "staff professionalism". Perhaps both stem from the fact that new systems were being created (Miles, 1980; Gold and Miles, 1981), less subject internally than our other sites to the constraints and pains of the existing order.

This concludes our discussion of transformations in the innovation, in users, and in the local organization. We now turn to the question of the outcomes of the implementation processes we have been examining.

---

[*] Latitude and pressure are not necessarily opposed; we had many cases where both were moderate to high (Banestown, Plummet, Perry-Parkdale, Astoria, Calston, Proville) at the central office level, the local school level, or both.

CHAPTER VI

THE OUTCOMES OF SCHOOL IMPROVEMENT

Now we begin the end of our story. What were the ultimate outcomes of the school improvement projects we have been studying? And what might explain the degree to which a site achieved stronger or weaker outcomes? In this section we review the six outcomes we analyzed, and review how the sites fared on them. Then we look at a series of "predictors"--factors in the innovation, the site context, and the implementation process --that might explain why particular outcomes were achieved. Then we proceed in more depth, outcome by outcome, searching for explanations for each one. The reader will encounter what feels like repetition, since the variables we have been discussing so far will be re-invoked in our search for confirmation and integration.

The Outcomes

We originally considered (see Fig. 1, p.214) that school improvement should reasonably lead to (a) institutionalization of the innovation; (b) various gains and losses, both individual and institutional; and (c) to assorted side effects.

As our analysis proceeded, we developed a more-differentiated list of outcomes, as follows:

> *Stabilization of use*: the degree of practice mastery and "settledness" of the new practice in users' instructional repertoire. We have already reviewed this outcome as the last stage of later implementation (pp. 200-210).
>
> *Percentage of use*: the number of users in a school or district in proportion to the number of "eligible" or possible users. (This is in effect a measure of the spread or internal diffusion of the innovation: how widely is it being used by those who could potentially use it?)
>
> *Institutionalization*: the degree to which the innovation is "built in"—incorporated into the ordinary structures and procedures of the school and its surrounding district. By this we do not mean sheer "continuation", which might occur, for example, if a key administrator willed it----but the presence of indicators that the innovation had become organizationally routine.

These first three outcomes focus on whether the innovation is stable, widely used, and "built in". But the question still arises: what does the innovation do for people? To answer this question, we focused on three "impact" outcomes, as follows:

> Student impact: achievement, affective and behavioral changes in students as a result of exposure to the innovation.
>
> User capacity change: changes in users' knowledge, attitudes or slills which are of general professional value, beyond the immediate innovation's requirements. (The idea is of increased capability, strength, development as a professional)
>
> Job mobility: movement of school personnel to new positions, either inside their schools or districts (down, sideways, or up), to new positions outside their districts, or out of education altogether.

This last outcome may seem surprising. School improvement projects are supposed to improve schools, not to shift people into new jobs. We found, however (to anticipate later discussion), that at least half the projects we were studying did have decisive effects on job changes. Some people "rode" the innovation to new and better positions, leaving a promising program behind; others had their sights raised and saw new opportunities; still others were "burned out" or became discouraged about their prospects and sought jobs elsewhere. Job mobility is an example of a frequent, but largely inattended, outcome of school improvement projects. We should note, too, that it occurred in many sites for reasons unconnected with the improvement effort--such as fiscal crisis.

How did our sites fare on these outcomes? Chart 39 displays the results of our analysis, to provide a general overview. The chart is deliberately arranged alphabetically within IV-C and NDN program sponsorship, rather than by magnitude of "total" outcome, because we do not wish to promote the idea that all six outcomes are equally important - and/or similarly high or low within a particular site. The outcomes cannot be simplistically added together to result in some general "goodness of outcome" score. However, in Chapter VII, we will explore the degree to which the sites fall into general families, each with a roughly similar degree of success.

Chart 39 Outcomes of School Improvement Effort, by Sites

SITES, by program sponsorship	Stabilization of use	Percentage of use	Institutionalization	Student impact	User capacity change	Job mobility
NDN sites						
Astoria	high	mod	high	mod/low	low/mod	mod
Banestown	mod	mod	mod	high	high	high
Burton	mod	low	low	low	low/nil	nil
Calston	mod/high	mod	low	mod	low/mod	mod
Lido	mod/high	mod	high/mod	mod	mod	low
Masepa	mod	high	mod/high	high	high	low/mod
Perry-Parkdale	mod/high	mod	low	high	high	high
IV-C sites						
Carson	mod	high	mod	mod	mod	mod
Dun Hollow	low	low	nil	low/mod	low/nil	nil
Plummet	mod	mod	high	high	high	mod/high
Proville	low	low	nil	low	nil	high
Tindale	high	high	high	high	high	high

We will not dwell on this chart here, since we will review each outcome in detail below, and develop explanations for its degree of achievement. For now, it is perhaps enough to note that the outcome patterns across sites, and across program sponsors, are indeed diverse and non-monolithic.

Predicting Outcomes

How could we understand what led to what in our sites, in a systematic way? Appendix J shows our solution: a "causal network" of thirty or so variables, with arrows between them showing what we believed were causal influences. We began this exercise with a common list of 35 variables, (Table 1, p. 20) which we expected would make sense in each of our sites. In fact, we found (a) that four or five of the 35 were typically not in play in any given site; (b) that a few site-unique variables forcefully insinuated themselves; and (c) that as we proceeded through the final cross-site analysis, five additional variables, such as "administrative latitude", emerged as important predictors.

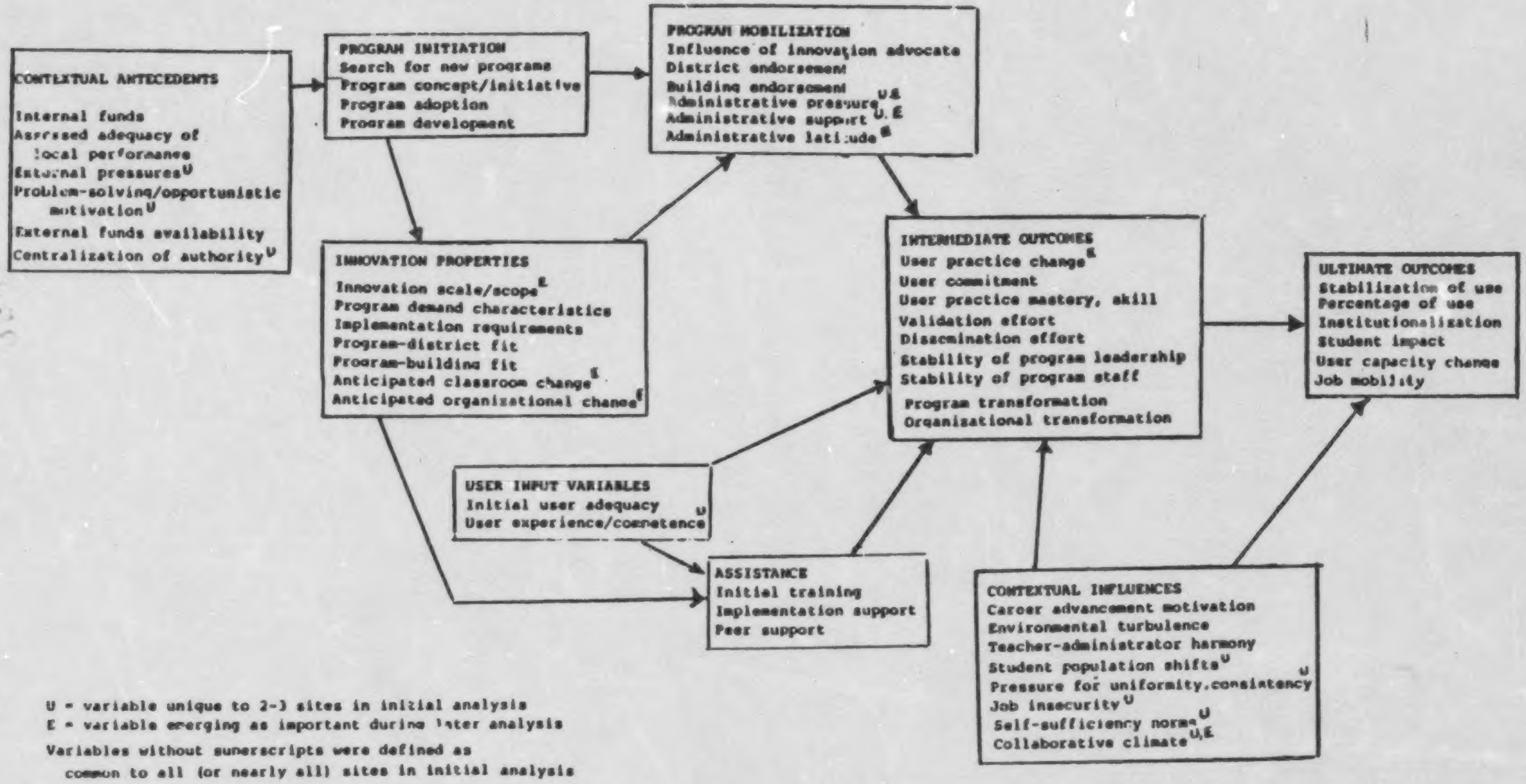
Figure 12 displays all these variables in one place, sorting them into blocks, each with a general heading. The arrows show the general direction of influence between blocks.* In brief, the general idea is that contextual antecedents in the local district lead to program initiation involving a particular innovation; the properties of that innovation as well as the initiation process itself lead to a stage of program mobilization. The innovation properties set requirements for the sort of assistance needed, in tandem with the kind of users involved. The assistance, the properties of users, and program mobilization processes all lead to intermediate outcomes, ranging from user commitment to organizational transformation. But those intermediate outcomes are not enough to account for final or ultimate outcomes: those are influenced as well by local contextual influences, which naturally have a conditioning effect on intermediate outcomes as well.

In the next section, we treat in succession each of the six ultimate outcome variables. First we provide a general description of how much

---

[*] Naturally, we found many specific instances of influence in other directions between specific variables, as well as within-box influences.

Fig. 12: The School Improvement Process: Predictors and Outcomes


CONTEXTUAL ANTECEDENTS
Internal funds
Assessed adequacy of local performance
External pressures^{U}
Problem-solving/opportunistic motivation^{U}
External funds availability
Centralization of authority^{U}
PROGRAM INITIATION
Search for new programs
Program concept/initiative
Program adoption
Program development
PROGRAM MOBILIZATION
Influence of innovation advocate
District endorsement
Building endorsement
Administrative pressure^{U,E}
Administrative support^{U,E}
Administrative latitude^{E}
INNOVATION PROPERTIES
Innovation scale/scope^{E}
Program demand characteristics
Implementation requirements
Program-district fit
Program-building fit
Anticipated classroom change^{E}
Anticipated organizational change^{E}
INTERMEDIATE OUTCOMES
User practice change^{E}
User commitment
User practice mastery, skill
Validation effort
Dissemination effort
Stability of program leadership
Stability of program staff
Program transformation
Organizational transformation
ULTIMATE OUTCOMES
Stabilization of use
Percentage of use
Institutionalization
Student impact
User capacity change
Job mobility
USER INPUT VARIABLES
Initial user adequacy^{U}
User experience/competence
ASSISTANCE
Initial training
Implementation support
Peer support
CONTEXTUAL INFLUENCES
Career advancement motivation
Environmental turbulence
Teacher-administrator harmony
Student population shifts^{U}
Pressure for uniformity, consistency^{U}
Job insecurity^{U}
Self-sufficiency norms^{U}
Collaborative climate^{U,E}

U = variable unique to 2-3 sites in initial analysis
E = variable emerging as important during later analysis
Variables without superscripts were defined as common to all (or nearly all) sites in initial analysis

BEST COPY AVAILABLE

of the outcome was achieved in our sites, then we do an analysis of what seems to have been "causing" or leading to the outcome. Usually, we give more emphasis, as Fig. 12 dramatizes, to the later links in the chain, intermediate outcomes and contextual influences, rather than dwelling on variables early in the causal chain. Those earlier variables and their interactions have been discussed in the preceding sections of this report.

Stabilization of Use

Introduction/Overview of Findings

In our analysis of later implementation (pp. 177-212), we traced the process by which innovations stabilize locally. We focused there on the stages and the ultimate extent of user practice mastery, which we tied in with the relative "settledness" of the innovation - whether it was still undergoing sizeable changes or was essentially in a refinement mode. Adding practice mastery to degree of settledness gave us a conceptually plausible and workable index of stabilization of use.

In the later implementation section, we also looked forward to the likelihood of continuation. It turned out there that stabilization of use may help but does not guarantee continuation, notably when users don't like the practice, administrators don't support it or the money to maintain it disappears. In this section, we will look backward—to the constellation of factors that account for high and low degrees of local stabilization of use.

In brief, we thought of stabilized use as including skillful mastery of the innovation, along with "settledness". Most of our sites achieved moderate to high stabilization. The critical factor assuring the "mastery" part was adequate assistance for users, who through growing mastery were "stretched" in their usual practice, gaining stronger commitment in the process. Building-level endorsement was also important in assuring "settledness", whether it was achieved by reshaping the innovation to make it "fit", or through giving less latitude to users, along with strong assistance.

Our basic tool for this analysis was the "causal network" we had developed for each site (see Appendix J for an example). Each network was a summary display of the factors that we believed accounted for the final outcomes at each site: a complex but clearly-defined web of thirty or so such factors was typically at work. Our approach in this section is to look for typical factors affecting stabilization of use, then to tease out alternative "scenarios" which led to high or low amounts of stabilization of use.

One methodological note before jumping in: at a few sites, the causal networks included the notion of stability of program staff, on the reasonable premise that an innovation is unlikely to settle down if its users keep changing. But to protect uniformity of analysis, we only used this variable as a predictor of stabilization, that is, included it when it led directly to changes in practice mastery and program settledness, and thence to our final outcome, stabilization of use.*

What it Takes to Get Stabilized

In our first pass through the causal networks, and the explanatory text that accompanied them, we tried to determine which conditions had to be met for stabilization of use to occur. Looking at the networks, we extracted "streams" running from antecedent variables through mediators to our semi-final outcome indices, "user practice mastery" and "program settledness," and finally out to our dependent measure, "stabilization of use." This process usually involved some interpretation. For example, goodness or poorness of "user fit" prior to adoption was little help; we had to estimate whether initially-poor fits were improved and initially-good fits maintained during program execution.

This initial scan turned up 11 potential predictors. In order to see how well they predicted stabilization of use, we arrayed the 12 sites according to the levels of stabilization we had already estimated (pp. 201 ff.) and summed the relative "values" of each predictor to get a rough prediction index. Chart 40 shows how this turned out.

Let's look at the chart, first generally, then selectively.

The main problem visible is that we have little range; 10 of the 12 sites have high to moderate stabilization. If we try to resolve that by

---

*We used not only the original causal networks (based on data collected through June 1980) but feedback data collected from site personnel who critiqued the networks during the fall of 1980.

Chart 40 Selected Variables Predicting Stabilization of Use

Sites/Predictors	User fit good/resolved	Building fit Good/resolved	Building endorsement	District fit good/resolved	District endorsement	Teacher administrator harmony	Adequate preparation	Overall assistance provided	User acceptance commitment	Program staff stability	Program leadership stability	Prediction Index#	Rank
High Stabilization													
Astoria (NDN)	+	+	+	+	+	+/÷	+/÷	÷	÷	+	+	27	1.5
Tindale (IV-C	÷	+	+	+	+	÷	÷	+	+	+	+	27	1.5
Moderate-high stabilization													
Calston (NDN)	÷	+	+	+	+	-÷	+	÷/-	+	÷	+	20	6.5
Perry-Parkdale (NDN)	÷	÷	-	+	+	-	÷	+/÷	+	+	+	18	8
Lido (NDN)	+	-	-	--/-	MD	-	+/—	+	÷/-	+	-	7	10.5
Moderate Stabilization													
Burton (NDN)	+	+	÷	+	+	MD	+/÷	-	÷/-	+	+	20	6.5
Banestown(NEN)	+	÷	+	+	+	+	-	+	+	+	-	23	3
Masepa (NDN)	÷	+	+	+	+	+	-	+	÷	+	-	21	5
Carson (IV-C)	÷	÷/-	÷/-	+	+	+	-/-	÷/-	÷/-	+	+	17	9
Plummet (IV-C)	+/÷	÷	+	+	÷	+	÷	+	+	÷	÷	22	4
Low stabilization													
Dun Hollow (IV-C)	-	-	÷/-	+	+	÷/-	÷/-	÷/-	-	÷	+	7	10.5
Proville (IV-C)	-	-	-	+	+	MD	-	-	-	-	-	2	12

Legend

* Refers to teachers in participating high schools

MD=Missing data

#

+ high (3 pts)
÷ moderate (1 pt)
- low (-1 pt)

BEST COPY AVAILABLE

looking at the two extremes - say, pitting Astoria, Tindale and Calston against Dun Hollow and Proville--there are some suggestive contrasts: program-building fit, building endorsement, user commitment and program leadership stability distinguish high- from low-stabilization sites. More on these in a moment, when we study how these variables operate to heighten or lower stabilization of use.

Still doing a general scan: if there were a linear relationship between the predictors and the level of stabilization, we should see a thinning of the "+" scores and an increase in the "-" scores as we read down the columns of Chart 40. We don't, except at the extremes. Some predictors remain high throughout (ex: "district fit," "district endorsement"). Others are uneven or spotty throughout (ex: "user fit," "user commitment."). Some are uniformly low (ex: "adequacy of initial preparation").

We can also see that both "building endorsement" and "teacher-administrator harmony" seem higher in moderate stabilizers than in higher-level stabilizers. This suggests that there are probably several avenues to moderate-to-high stabilization, possibly running off a few central highways, some well-paved, like "district endorsement," others well-rutted, like "adequacy of initial preparation."

Reading down the last two columns also helps to get a better fix. The "prediction index," which we get by summing the predictor values, does discriminate between the highest and lowest stabilizers, but not between the intermediate cases. The ranks in the final column also show that the relationship between stabilization of use and the predictor variables only works at the tails.

We might guess from this failure to predict the middle of the distribution that other variables, not on the chart, may be at work. A plausible example is the variation of actual practice change. It was high at Banestown, Plummet, Masepa and Carson, which had moderate stabilization. It was low at Astoria, Calston, and Burton, which had moderate to high stabilization. In other words, some sites stabilized more readily than others because there was less change to contend with.

Furthermore, we have the anomalous case of Lido, which has moderate/high stabilization with a very weak prediction index. We might guess from this that some predictors may be key, may be affecting the others, may matter more. In fact, "low"leadership stability" at Lido did have a debilitating effect on several other predictors (ex: "building endorsement", "user commitment",and "teacher-administrator harmony"), thereby lowering the summed index score substantially.

Finally, the prediction index is both normative and monolithic. It tells us how stabilization of use should occur if local sites do things the "right" way. But empirically, things are bound to be sloppier. It is likely that only some of the predictors are actually affecting stabilization in a direct way. It is also likely that their interactions— the order in which they occur, and the mix of directly- and indirectly-impacting ones —are an important set of clues in explaining outcomes.

We used the following procedure to illuminate these empirically-driven causal paths. First, on each causal network,* we traced back the predictors from "stabilization of use" that lay in a direct stream, i.e. were connected by an unbroken stream of arrows. We also noted the predictors (boxes) that were *immediate* causes—lay close to the "stabilization" variable on a direct path—and ones that were more *remote*, further back on the direct path. We then identified the remaining predictors that were on the chart—but not connected to the "stabilization" box by any route. If you couldn't get from there to stabilization of use, we assumed weak or no causal influence. Finally, we noted predictors that were *missing* on the causal networks, which meant that analysts had considered them inoperative as causal factors.

---

* How did we assign "causality" to factors in the network in the first place? Our approach was primarily inductive; we examined the actual flow of events and resulting changes in the site. A "cause" was a variable that existed before or simultaneously with a second variable, and according to respondents' attributions and our own theoretically-derived expectations, brought about change in that second variable. For further discussion see Huberman & Miles, 1982; Miles & Huberman, 1982.

Chart 41 is the fruit of this exercise. It is encouraging. For 9 of the 12 variables we examined, there were causal paths—immediate or remote—on at least *one-half* of the causal nets.

If we highlight variables with direct causal links on at least 8 of the 12 networks, we get the following list:

Overall assistance (11 sites)
User commitment/acceptance (11 sites)
Implementation requirements (11 sites)
District endorsement (9 sites)
User practice mastery (8 sites)
Program transformation (8 sites)

We should note that "user practice mastery" is one of our variables constituting user stabilization. "Program transformation" is not the precise inverse of "program settledness", our other measure of stabilization. "Program settledness" implies that transformations were either minimal, or had ceased during later implementation (though they might have been substantial earlier on). In any case, the two variables are related.

Chart 41: Immediate and Remote Paths from Predictors to Stabilization of Use

Stabilization Levels/Sites	User practice mastery	Program transformation	Overall assistance	User commitment, acceptance	Implementation requirements	Program-user fit	District endorsement	Adequacy of initial preparation	Program-building fit	Program-district fit	Teacher-Administrator harmony	Building endorsement
Astoria (NDN)		→			--→		--→		--→	--→	→	
Tindale (IV-C	→		→	→	--→			→		--→	→	
Moderate-high stabilization												
Caleton	→	→	→	→	--→		→	--→	--→	→	--→	→
Perry-Parkdale (NDN)	→	→	→	→	--→		--→	--→	--→	--→		→
Lido (NDN)	→		--→	→	--→	→	--→	--→		--→		
Moderate stabilization												
Burton (NDN)	→	→	→	→	→	→	--→		→			
Banestown (NDN)	→	→	→	--→	→	--→	--→	--→		--→		
Masepa (NDN)	→	--→	→	--→	--→		→	--→	--→		--→	--→
Carson (IV-C)		→	→	--→	→	--→		--→	→			
Plummet (IV-C)	→	→	→	--→	--→	--→	--→	--→		--→		
Low stabilization												
Dun Hollow (IV-C)			→	→	--→		--→					--→
Proville (NDN)			→	→					--→		--→	→
Totals Immediate cause →	8	7	10	7	4	2	2	1	2	1	2	2
Remote cause --→	0	1	1	4	7	3	7	6	5	6	3	2
Total	8	8	11	11	11	5	9	7	7	7	5	4

Legend → Immediate causal path (not more than 2 steps away from outcome)
--→ Remote path (more than 2 steps prior to outcome)
(blank) Not causally connected, or not on causal network

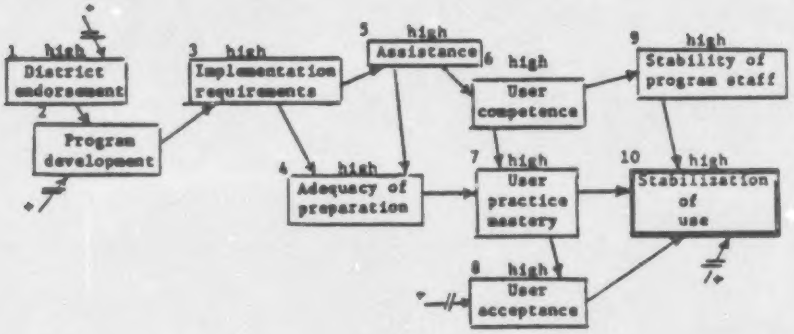
BEST COPY AVAILABLE

Scenarios leading to High Stabilization

Conceptually, the list of "good" variables from Chart 41 sounds reasonable. If an innovation is a fairly good fit with users' prior practice, has significant (non-trivial) implementation requirements, and is accompanied by district endorsement, we might expect a gradual process of user mastery and adaptation of the innovation, accompanied by user commitment, and leading to stabilization. But how does the process actually work in sites? Let's look at a few typical scenarios.

The high road to success: high practice mastery. Tindale is one of the high stabilization sites. It scores well on both the "practice mastery" measure and the "program settledness" measure. Looking at an excerpt from the causal network*, here is how the "practice mastery" process works:

Figure 13: Practice Mastery and Stabilization of Use: Tindale (IV-C)


1 high
District endorsement
2
Program development
3 high
Implementation requirements
4 high
Adequacy of preparation
5 high
Assistance
6 high
User competence
7 high
User practice mastery
8 high
User acceptance
9 high
Stability of program staff
10 high
Stabilization of use
+
+
+
/+

+Influence of other variables not discussed.

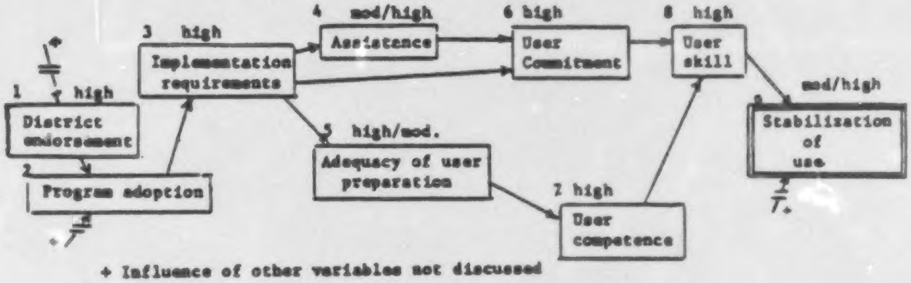
Note that all the boxes are rated "high." Tindale has everything going for it, including high adequacy of preparation,(4) which was typically uneven or poor elsewhere. The story here looks at first uniformly cheery: the district endorsed (1) an ambitious project(3), prepared and backstopped it well(4,5) and produced skillful(6,7) compliant(8) users whose stability(9) enhanced the project's stabilization(10). Except that the script at Tindale had some pain in it: "user acceptance" followed a long period of low user commitment. Essentially, users were constrained to use a widely disliked practice, but over time, and as a result of increasing skill, came to accept, and even like it.

---

*In producing these excerpts, we typically took all variables seen as immediate causes of (that is, two steps prior to) the outcome being studied, plus other connected ones that were essential for telling the story.

An alternative path to skillful stabilization includes user commitment earlier in the process. Here's an excerpt from the Perry-Parkdale causal network:

Figure 14: Practice Mastery and Stabilization of Use: Perry-Parkdale (NDN)


+
1 high
District endorsement
2
Program adoption
+
3 high
Implementation requirements
4 mod/high
Assistence
5 high/mod.
Adequacy of user preparation
6 high
User Commitment
7 high
User competence
8 high
User skill
9 mod/high
Stabilization of use
+

+ Influence of other variables not discussed

Again, the harbingers of stabilization are all good. The project was well-endorsed(1) and well-assisted(4,5). Users liked it (6) and got better at doing it(7,8).

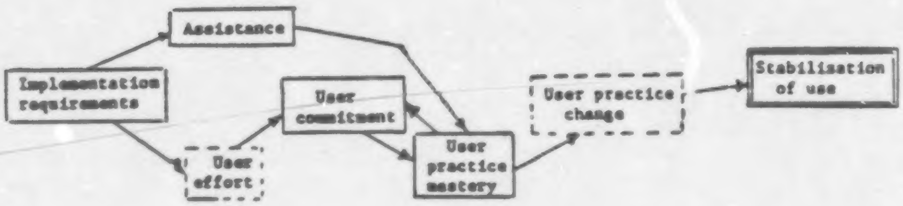
Three noteworthy points here. First, we found the combination of assistance-skill-commitment to be proximate to stabilization at virtually all sites. These are the variables that lie closest to the outcome measured and appear to be the most decisive in determining ultimate levels of skillful stabilization. If commitment and assistance are low (as, for example, at Proville and Dun Hollow), a more favorable but distant predictor, like high "district endorsement" or high "program-district fit" does not turn the situation around.

Secondly, note that commitment *follows* program adoption. We saw earlier (Chapter IV) that many users were lukewarm or wary about the practice initially, and got seduced or strong-armed into program execution by enthusiastic administrators. Even users with more favorable initial attitudes, like those at Perry-Parkdale, had their doubts or came to the project more for career-related reasons than because of deep-seated commitment to the project's goals. But what happens? Users confront a challenging practice that turns out to be more intractable than they thought. They work hard at it, receiving external and peer assistance. They gradually get on top of it. The *process* of effortful mastery of a professionally demanding project heightens commitment. Commitment is *achieved* — is not necessarily pre-existent to program execution. For example, lukewarm or low levels of initial commitment got turned around at Masepa and Tindale by the challenge of the exercise, by the experience of craft mastery and by the support provided by peers, administrators and external consultants. In policy terms, this may mean that we have been wasting some of the time invested in assuring ourselves that users want to do the new project. More energy should go to the follow-up support that can deliver users' commitment when it improves practice mastery.

This brings us to the third point: the presence of latent variables. We realized during our analysis that some variables (for example, "implementation requirements" or "program demand characteristics") assume the presence of latent or underlying variables (in this case, the latent variable of *"user practice change"* could be expected to follow when a program's requirements or demand characteristics were heavy). So better mapping of the "practice mastery" scenario should include this latent variable: it would go like this. The project makes demands in terms of the classroom-level changes needed to make it work. Users progressively meet those demands through the assistance-supported process of practice mastery, and in so doing become more committed to the practice. We might note, for support of this scenario, that levels of user commitment are lower at most of the sites with lower degrees of practice change (Astoria, Calston, Dun Hollow, Burton).

Reflection also suggests adding another latent variable to the formula, "user effort." As we saw in the analysis of early implementation (pp. 109ff.), practice change seldom came cheap, without storm and stress. Part of the celebration of successfully making these changes seems to result from the time and energy expended in achieving practice mastery. This is a staple of cognitive dissonance theory: effort builds commitment, if only to justify to oneself why one has expended so much effort (Lawrence & Festinger, 1962) and greater effort, of course, usually improves performance. So a fuller model of skill-driven stabilization of use - and one which explains both high and low levels of stabilization - would look like this:

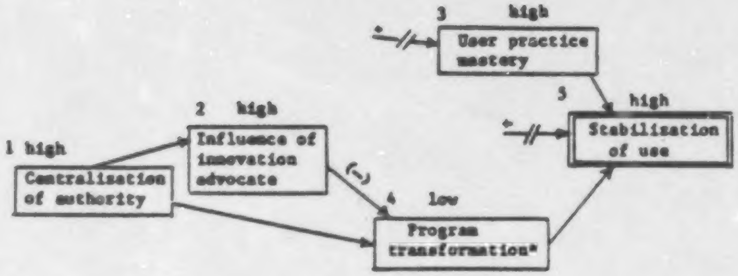
Figure 15: Practice Mastery and Stabilization of Use: General Model with Latent Variables


Assistance
Implementation requirements
User commitment
User effort
User practice mastery
User practice change
Stabilization of use

Tindale revisited: program settledness. We said that Tindale achieved high stabilization because it performed well on both practice mastery and program settledness. How did it achieve program settledness?

The answer is simple: enforcement. The pathways look like this:

Figure 16: Program Settledness and Stabilization of Use: Tindale (IV-C)


3 high
User practice mastery
5 high
Stabilization of use
2 high
Influence of innovation advocate
1 high
Centralization of authority
(–)
4 low
Program transformation*
+
+

+ influcnce of other variables not discussed.

*Low program transformation meant high program settledness, at this site.

We have described this "enforcement" scenario in our analysis of changes made in the innovation (pp. 239 ff.). We noted, however, that only 2 sites (Tindale and Masepa) followed this pattern.

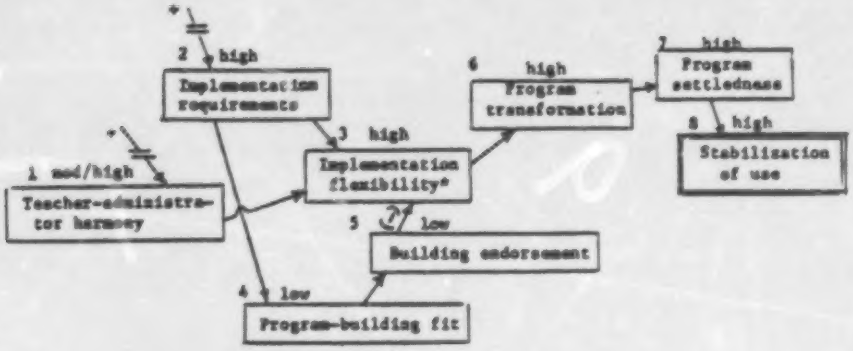
The flow is straightforward. Given strongly centralized authority(1), the innovation advocate's influence(2) was high in restricting program transformation(4).* That, along with user practice mastery (3) accounted for stabilization (5).

---

* Here, as with our original causal networks from which these excerpts were drawn, the symbol (-) refers to *inverse* causal relationships, where high X causes low Y or vice versa. *Direct* causal relationships have no sign attached.

Stabilization through administrative latitude. For another (and more frequent) script, let us look at the other high-stabilizing site, Astoria.

Figure 17: Program Settledness and Stabilization of Use: Astoria (NDN)



+
2 high
Implementation requirements
+
1 mod/high
Teacher-administrator harmony
3 high
Implementation flexibility*
5 low
Building endorsement
4 low
Program-building fit
6 high
Program transformation
7 high
Program settledness
8 high
Stabilization of use

+ Influence of other variables not discussed.
*Site-specific variable

At Astoria, we can see that the program settled down(7) essentially because administrators, who had good working relations(1) with users, gave users "implementation flexibility"(3) in carrying out a demanding(2), poorly-fitting (4) program. The program was substantially transformed(6) in the process of becoming stabilized.

As we looked at other moderate to high-stabilizing sites, this pattern recurred; it was virtually identical at Calston and Burton, and similar at Carson. The program settled down because administrators let users reduce the discrepancy between ongoing school-level and classroom-level practices and the demands of the innovation---by changing the innovation. So program transformation is the way many schools "metabolize" innovations.

The underlying variable, as we have already noted, is "*administrative latitude*." Note, by the way, that program stabilization at Tindale and Masepa can be seen as in part the product of *low* administrative latitude, which must be accompanied by plenty of assistance, and administrative pressure.

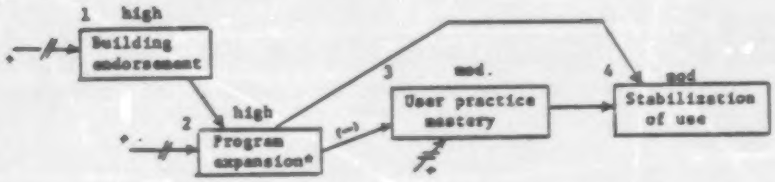
Scenarios Leading to Lower Stabilization

Up to now, we have looked at higher-stabilization scenarios. How about less successful cases? Are they less successful because the same variables rated "high" on the strong stabilizers are rated "low"?

Lower stabilization from moderate practice mastery. For several low-stabilizing sites, the answer seems to be "no:" practice mastery is moderate, not low. This is true for Dun Hollow, Masepa, and Banestown.*

Masepa and Banestown have something thematically in common: *new* inputs (of users, or of students) but they mean something different at each site. At Masepa, the input of more and more users destabilized the successful program somewhat, as shown below:

Figure 18: Moderate Practice Mastery and Stabilization of Use: Masepa (NDN)



+Influence of other variables not discussed
*Site-specific variable

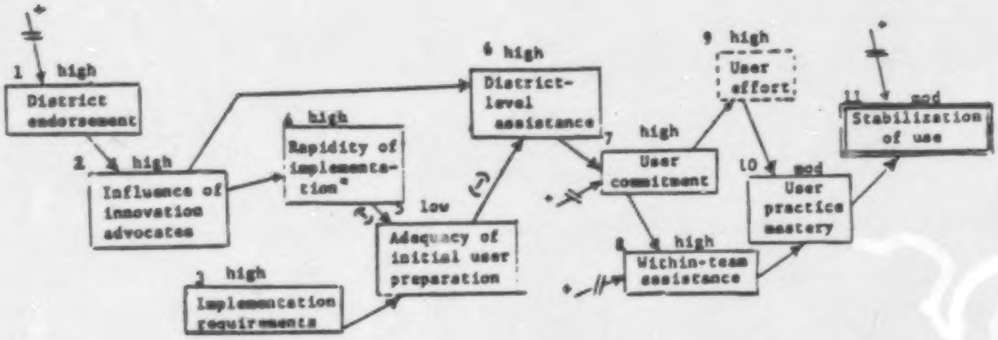
---

*Dun Hollow had "moderate" practice mastery mainly because users dealt with the project by doing, revising, then discarding it; a better judgment on "practice mastery" might be "not applicable."

As the program was seen to succeed and gained building endorsement(1), more users were brought aboard(2) so that the site-level assessment of practice mastery (3) had to include recent users, who were often foundering on components which third-year users had well under control.

There is a similar pattern at Banestown, where we watched users only 18 months into execution of a sophisticated individualized instruction program in a novel (pull-out) setting. Had we picked up this site in its 3rd or 4th year, skill mastery would have been higher. But the causal flow is still instructive:

Figure 19: Moderate Practice Mastery and Stabilization of Use: Banestown (NDN)


+
1 high
District endorsement
2 high
Influence of innovation advocates
3 high
Implementation requirements
4 high
Rapidity of implementation*
5 low
Adequacy of initial user preparation
(-)
(-)
6 high
District-level assistance
7 high
User commitment
+
8 high
Within-team assistance
+
9 high
User effort
10 mod
User practice mastery
11 mod
Stabilization of use
+

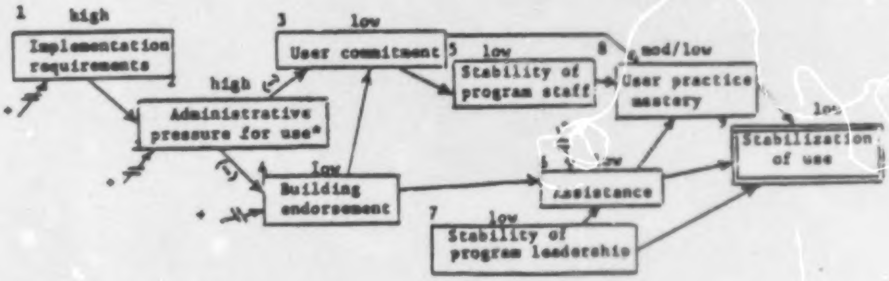
+Influence of other variables not discussed
*Site-specific variable

This site illustrates two "streams" also found elsewhere (ex: Masepa). The first is the "demands-to-assistance" stream. Higher implementation requirements(3) depressed the adequacy of initial preparation(5). That in turn led to assistance from without(6) and within (8), which compensated for low technical readiness and jacked up levels of commitment (7), effort(9) and practice mastery(10). As we have seen earlier (pp. 163-165) initial levels of assistance—be it moral or technical—are less meaningful than later levels of assistance.

The second stream might be called "district endorsement-to-assistance." Central office advocates (2) endorsing the innovation(1), got program adoption, then moved rapidly(4) to program execution—too rapidly for users. So the project got into trouble. But these advocates wanted the project to succeed and they had access to resources for making that happen. So they got the project out of trouble by providing assistance(6) in the form of encouragement, consultants and/or materials that reinforced the effort-commitment-mastery cycle. Thus, levels of district endorsement usually have practical consequences, not just at the time of adoption, but further down the line.

The lowest of the low. At the extremes, we do see the linear relationship we proposed between predictors and stabilization of use. If at Tindale, all the key antecedents of practice mastery were high, contributing to high stabilization of use, at Proville the same antecedents were rated low and they acted to bring on lower stabilization. Compare Figure 13 (Tindale) with the practice mastery stream at Proville:

Figure 20: Lower Practice Mastery and Stabilization of Use: Proville (IV-C)



1 high
Implementation requirements
2 high
Administrative pressure for use*
(-)
3 low
User commitment
4 low
Building endorsement
5 low
Stability of program staff
6 low
Assistance
7 low
Stability of program leadership
8 mod/low
User practice mastery
low
Stabilization of use
+
+
+

* Site-specific variable
+ Influence of other variables not discussed

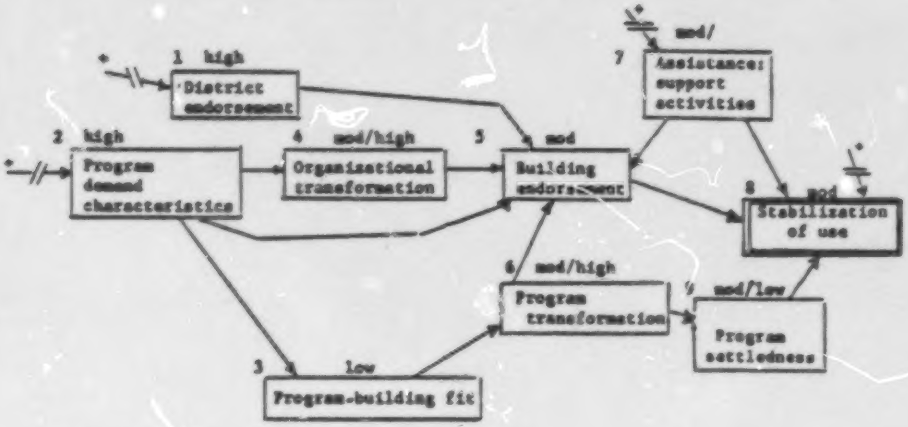
Here nothing worked "right." A demanding innovation(1), pushed by the administration(2), encountered resistance(4) and weak commitment(3) at the building level. Instability of program staff(5) and leadership(7) enfeebled assistance efforts(6), and mastery(8) was minimal. The innovation withered away.

Lower stabilization of use from lower program settledness. We saw that program settledness feeds overall stabilization of use either by suppressing program changes (ex: Tindale) or by allowing discrepancy-reducing ones (ex: Astoria). What keeps programs from getting settled?

For some cases, the answer is the same as for practice mastery: inputs change. At Plummet, external and district support waned just as users were contending with still another form of internal organization. At Burton, users hadn't decided how much—or how little—of the project they wanted to incorporate into their curricula. At Masepa, we could call program instability a positive attribute, since new, usually more complex components of the innovation were continuously being introduced into the schools. Users never settled down because the program was changing, presumably for the better. And at Carson, we have the opposite phenomenon: users are unsettled as a result of prolonged simplification of the project to make it less demanding. So we seem to have site-specific variations on the general theme of input instability.

But let us look more closely at the dynamics of lower program stabilization. Here is the sequence at Carson:

Figure 21: Lower Stabilization of Use from Program Unsettledness: Carson (IV-C)


1 high
District endorsement
2 high
Program demand characteristics
3 low
Program-building fit
4 mod/high
Organizational transformation
5 mod
Building endorsement
6 mod/high
Program transformation
7 mod/
Assistance: support activities
8 mod
Stabilization of use
9 mod/low
Program settledness
+
+
+
+

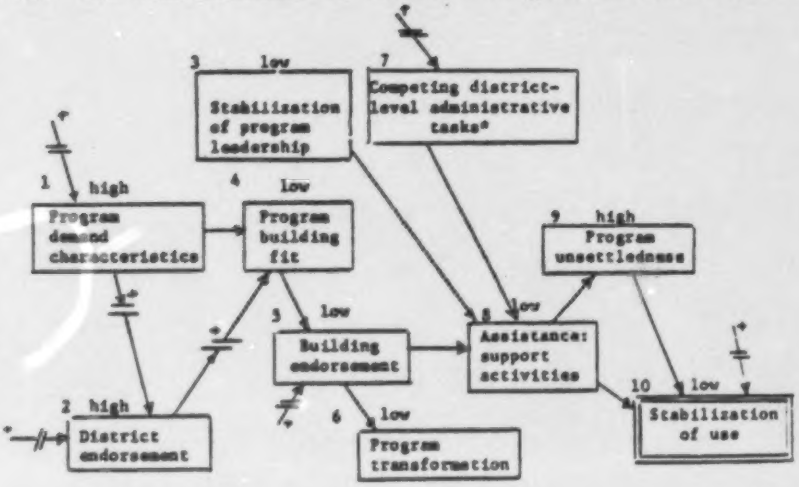
+Influence of other variables not discussed

As with the three other cases of discrepancy-reduction (see Fig. 17), the institutional task here is to achieve program stabilization by changing the innovation to improve its local fit, thereby gaining building endorsement. Here the program's demands(2) resulted in poor fit (3), and, for later users, in low building endorsement(5). So the accommodation process began, facilitated by some of the organizational transformations(4) the project had wrought (ex: increased interpersonal trust, improved communication). Users, with the tacit consent of administrators, began watering down and otherwise streamlining the program(6). Building endorsement(5) improved, as did, presumably, later program-school fit (not shown on figure). Though these changes reduced the impact of the project, they improved its stabilization(8). As we saw earlier (ex: Astoria, Burton), this is a common tradeoff: more rapid program settledness(9) for less program impact. Unfortunately, external support(7) at Carson was weak, which kept building endorsement(5) lukewarm and made the streamlining process more stressful. Essentially, however, the building endorsement problem was resolved.

If that problem is not resolved, projects get into trouble, notably in terms of program stabilization. Note from Figure 21 (Carson) that district endorsement was high, but that it did not deliver high building endorsement. The same problem was present at Dun Hollow, Perry-Parkdale, and Proville---all cases where ultimate program survival was tenuous. At Perry-Parkdale, endorsement of the principal was lacking; at Proville, there was low endorsement by both principal and teachers. At Dun Hollow, project teachers were unhappy, and building administrators backed them implicitly. So program stability—and beyond this, institutionalization—are unlikely if building-level actors, including non-users, are actively non-supportive, whatever the amount of district-level support. Central office administrators can get an innovation adopted, as we saw in the adoption section(Chapter IV, pp. 60 ff.) but they can't ensure its survival without obtaining building-level support. The price of that support is typically the innovation transformation required to produce a better program-building fit.

To close out this discussion, let us show the same variables at work as in Figure 21, but resulting in a low level of building-level endorsement that compromises program stabilization:

Figure 22: Low Stabilization of Use from Program Unsettledness: Proville (IV-C):



3 low
Stabilization of program leadership
7
Competing district-level administrative tasks*
1 high
Program demand characteristics
4 low
Program building fit
9 high
Program unsettledness
5 low
Building endorsement
8 low
Assistance: support activities
2 high
District endorsement
6 low
Program transformation
10 low
Stabilization of use
+

+Predictor and intervening variables not shown, to facilitate comparison with Fig. 21.

*Site-specific variable

In contrast to the situation at Carson, there was no sustained movement here to improve goodness of building fit(4) and heighten endorsement(5) by changing the program(6). The weakly-designed innovation was essentially left to rot. There was no district-level follow-up(8) on early difficulties as at Banestown and elsewhere (see Figure 19). In Proville, district administrators were busy with competing administrative tasks (7), and building principals were uninterested in helping out, so there was no remediation activity(8). For lack of the requisite remediation and endorsement-gaining efforts, the project withered away.

Conclusions

Stabilization of use was a compound of practice mastery and program settledness. Overall, we had 10 sites that worked their way to moderate-to-high levels of practice mastery and program settledness.

An analysis of the 12 cases, using the causal network for each, showed that there were several avenues to both higher and lower stabilization of use. Higher mastery usually resulted from the provision of adequate initial preparation and follow-up assistance, along with strong local endorsement, all of which translated into users' acceptance of or commitment to the project, and into users' technical mastery of its core components. The thumbnail scenario was as follows: users confronted a challenging new practice that turned out to be more intractable than expected. They worked hard at it, receiving peer and external assistance and gradually mastered it, thereby heightening their commitment. Lower assistance, both initial and ongoing, tended to depress levels of practice mastery and commitment.

Higher program settledness was helped but not assured by skillful execution. Rather, it resulted chiefly from building-level endorsement and limitation of changes in pupil or program characteristics. Endorsement often came from resolving the problem of building-level fit, which was often done by transforming the innovation to make it more amenable institutionally. Closely-policed innovations also settled down--few changes were authorized--and gradually, sometimes grudgingly, got the building-level endorsement that assured settledness.

Percentage of Use

How widely had the innovations we studied diffused within the buildings where they were being used, and within their surrounding districts? And what might account for that spread?

Introduction/Overview of Findings

Working from interviews, documents, and the results of the survey data, we established for the school buildings and districts we were studying just how many current users there were, and what the possible "eligible" population of users might be. Were all potential users involved with the innovation, or only a fraction?

In brief, we found a wide range: three sites had very substantial diffusion of the innovation within buildings and their district, another six achieved high percentages of use within the building, or for specialized student groups, and three had a minimal percentage of use. Higher percentages of use occurred when there was administrative pressure accompanied by supportive assistance, and users developed both commitment and skill. Good teacher-administrator relationships seemed required for this process to succeed.

Percentage of Use: the Outcome

Chart 42 shows how our different sites looked as of the end of the 1980 school year. Our twelve sites fall into four clusters. Carson, Masepa and Tindale were all sites where percentage of use was substantial: all or many teachers in the school and district were eligible to use the innovation, and all or many were doing so. Tindale is a special case; it segments the student population to lower-track students, but we are still speaking of a substantial group of implementing teachers.

Our second category includes Plummet, Perry-Parkdale, and Banestown. They had full in-building use, but more limited district use. All were somewhat isolated programs: an alternative school, a work experience program, and a remedial laboratory. Since they were defined as set-off subsystems, all (100%) of their staffs were by definition using the innovation. But they appeared to be dealing with a much smaller fraction, usually indeterminate, of the total eligible student population in the district.

Our third category was moderate to full use for a specialized population. The Astoria EPSF screening program, though mandated district-wide, had only kindergarten and first grade teachers as eligible users. The Calston 4D reading program dealt only with intermediate teachers in elementary schools where the principal had shown active interest (23 of 25 principals rejected the innovation, and no one was going to force it on them).

---

*It could be argued that the Tindale Reading Program is essentially for a "specialized population" (lower-track students). But the substantial numbers of users involved make us put it with Carson and Masepa.

Chart 42: Percentage of Use, by Sites

SITES by Percentage of Use	In the building: Years of use	# users in bldg.	Eligible users in bldg.	% of use	In the district: Yrs. of use	# users in dist.	Elig. users in dist.	% of use	Eligibility criteria	Remarks
Substantial										
Carson (IV-C)	3	20	20	100%	3	42	42	100%	All regular teachers in dist(1 elem. 1 HS)	Mandated as of Fall '79.
Masepa (NDN)	3	9	11	82%	4	36	43	84%	All tchrs, grades 3-7, 6 schools	Mandated as of April, 1980
Tindale (IV-C)	4	29	36?	80%?	4	48	60?	80%?	Eng. math & sci. tchrs for lower-track students, 2 HS's. 60= max. of tchrs ever using innovation.	Not clear what maximum student population is.
Full in buildings, less in district										
Plummet (IV-C)	4	25	25	100%	4	N/A	N/A	?	Innovation is complete school; all present staff eligible.	Unknown whether school deals with all of potential target population (delinquents, 11 high schools).
Perry-Parkdale (NDN)	3	6	6	100%	3	N/A	N/A	?	Innovation is self-contained program; all present staff elig.	Program accomodates 3% of total jrs. and srs. from 2 HSs; unknown what "eligible" population is.
Banestown (NDN)	1½	3	3	100%	1½	10?	DK	?	Innovation is remedial lab; all lab staff eligible.	Used in 5 schls of large county system.
Moderate to full for specialized population										
Astoria (NDN)	1	5	5	100%	2	DK	DK	100%?	All 1st-grade tchrs & aides (92 schools).	Prog. mandated as of Fall '78; actual percentage of use throughout district unknown.
Calston (NDN)	2	2	2?	100%?	4	4	4--50	100% to 8%	Narrow definition; all intermediate teachers in schools with an interested principal (N=2)	Pct. of use for all 25 schools in district is 8%
Lido (NDN)	4	3	5	60%	4	3	5	60% to 8%	High school science teachers, in the one high school.	In princ. all 36 HS tchrs are elig. since innov. is interdisciplinary. Pct. use would thus be 8%
Minimal										
Burton (NDN)	1	1	5	20%	1	3	20?	15%?	All social studies tchrs, in 4 high schools.	Use defined as "experimental" during first year.
Dun Hollow (IV-C)	2½	2	13?	15%?	2½	3	84	3%?	All primary teachers (grades 1-3 in 7 elem. schools	Use defined as "field testing."
Proville (IV-C)	3	0	11 to 36?	0	3	0	44 to 144	0?	44 voc. ed. tchrs in 4 HSs and/ or 100 classified personnel.	A discontinuation as of Spring '79.

? Missing or inconclusive data

BEST COPY AVAILABLE

The Lido environmental studies program, though nominally "interdiscplinary" , involved use only by science teachers in the district's single high school.

And finally, we had three sites where percentage of use was minimal: a fifth or less of eligible teachers in the building and district were using the innovation in Burton, Dun Hollow and Proville (where, indeed, the percentage of use was zero, following discontinuation ("The VIP program is dead.").

What Caused Differences in Percentage of Use?

We can see from Chart 42 immediately that time alone is not a sufficient explanation of increasing diffusion through a building or district. In Banestown it only took 1½ years to get all "eligible" users of the remedial lab on board; in Astoria only 1 year was involved following the mandated adoption and flexible implementation of EPSF. On the other side of the continuum, we see that 4 years in Lido didn't achieve use by all eligible users, even within the confines of one small high school. Three years of scattered effort in Proville failed to get a resisted program during durably in place; at its height, we should note, the innovation only reached 40 of the proposed 100 students.

We can also see that program sponsorship tells us little: the substantial IV-C implementations at Carson, Tindale and Plummet are offset by the minimal ones at Dun Hollow and Proville. Similarly, we see high percentages of use under NDN sponsorship at Masepa, Perry-Parkdale and Banestown, and lower percentages at Lido and Burton.

To get a fuller picture of causation, we need to turn to our causal networks.

Recurrent predictors of percentage of use. Chart 43 was constructed by reviewing the 12 causal networks for our sites, working backwards from the "percentage of use" box. It embodies every predictor that was found to be proximate (within 2 steps) of percentage of use, in at least one of the sites. As we noted in the prior section, in any particular site the predictor might be (a) immediately proximate to the outcome; (b) remotely connected, by more than 2 steps (up to eight or ten steps, in some cases; (c) on the network, but unconnected to the outcome by any pathway; or (d) not on the network at all, considered irrelevant by the analyst. The chart shows these distinctions, in more differentiated form than we used earlier for "stabilization of use". The predictors have been clustered into six major areas for ease of interpretation. The sites are arrayed according to our four categories of percentage of use.

What conclusions can be drawn? Let's look at Chart 43 cluster by cluster.* First, in the pressure cluster, we can see that "advocate influence" tends to be high in 10 of 12 sites. But the linkage is remote in most sites, and there are no differences across our four percentage-of-use categories. So advocate influence, though it usually appears early during the causal chain, does not make a critical difference in percentage of use. We can see, however, that "administrative pressure" (to implement the innovation) tends to be higher in substantial/full percentage-of-use sites (Masepa, Tindale, Plummet) and absent in others. As we've noted earlier, the administrative pressure in Proville was in effect a paper tiger, since it was not backed up with either sanctions or support/assistance. Note, too, the presence of system-wide mandates for implementation in Carson and Masepa.

Next, in the endorsement cluster, we see that "district endorsement" and "user commitment" are most frequently identified as causing percentage of use——again, with most of the influence being remote. But note

---

*A simple decision rule is that a "strong" predictor of percentage of use should be high and immediately causal in sites with high percentage of use, and low and immediately causal in sites with low percentage of use.

Chart 43: Antecedents of Percentage of Use

Percentage of Use/ SITES	PRESSURE			ENDORSEMENT				DEMANDS/FIT					
	Advocate influence	Admin. pressure	Mandate (district-wide)	District endorsement	Building endorsement	User commitment	Teacher-admin. harmony	Program demand characteristics	Implementation requirements	Program district fit	Program school fit	Program User fit	Program transformation
Substantial													
Carson(IV-C)	High →	0	→	High ?	Mod ?	High - - →	High ?	- - →	High ?	High ?	Low ?	High - - →	Mod/high ?
Masepa(NDN)	High - - →	High - - →	→	High - - →	High - - →	High - - →	High - - →	0	High - - →	High (early) - - →	Low - - →	0	Low - - →
Tindale(IV-C	High - - →	High - - →	0	0	0	High →	High - - →	0	High - - →	High - - →	High ?	0	0
Full in buildings, less in district													
Plummet(IV-C	High - - →	High →	0	High →	0	High - - →	High - - →	0	High - - →	High →	0	High - - →	High - - →
Perry-Parkdale(NDN)	0	0	0	High - - →	Low →	High - - →	0	- - →	High - - →	High - - →	Low - - →	0	Mod/low →
Banestown(NDN)	High →	0	0	High →	High ?	High ?	High ?	0	Low - - →	High - - →	Mod/high ?	High ?	High ?
Moderate to full for specialized population													
Astoria(NDN)	High - - →	0	- - →	High - - →	0	Low/mod - - →	Mod/high - - →	0	High - - →	High →	Low - - →	Low/mod - - →	High - - →
Calston(NDN)	High ?	0	0	High ?	High ?	Mod ?	Low/mod ?	?	Low/mod ?	High ?	High ?	0 ?	Mod/high ?
Lido(NDN)	High - - →	0	0	High - - →	High - - →	High - - →	Low (later) ?	0	High - - →	High - - →	High (early) →	High →	High →
Minimal													
Burton(NDN)	High - - →	0	0	High - - →	0	Low →	0	- - →	Low - - →	Low →	Low →	Low →	High →
Dun Hollow(IV-C	High - - →	0	0	High - - →	Low →	Low →	Low →	0	High - - →	0	0	Low ?	High ?
Proville(IV-C)	High - - →	High →	- - →	0	Low →	Low - - →	Low →	- - →	0	High ?	Low →	0	Low ?
Immediate cause	2	2	2	2	3	3	2	0	0	3	3	2	3
Remote cause	8	2	2	6	2	7	4	4	9	5	3	3	3
Total	10	4	4	8	5	10	6	4	9	8	6	5	6

Legend:

→ Immediate cause(not more than 2 steps away from outcome)

- - → Remote cause(more than 2 steps prior to outcome)

? On network, but not causally connected, even indirectly

0 Not on causal network

HigH, Mod, Lo = strength or weight of the variable in the network

BEST COPY AVAILABLE

Chart 43 (cont'd): Antecedents of Percentage of Use

	ASSISTANCE		STABILITY				IMPACT	OTHER DIRECT CAUSES
Percentage of Use/ SITES	Adequacy of initial user preparation	Assistance	User Practice mastery	Stabilisation of use	Stability of program leadership	Stability of program staff	Student impact; prog. success	Other Direct Causes
Substantial								
Carson(IV-C)	High - - →	High→Mod/low ?	0	Mod/low ?	Low ?	0	High →	
Masepa(NDN)	Low - - →	High - - →	High →	High ?	0	0	High - - →	Institutionalization
Tindale(IV-C	High - - →	High - - →	High →	High →	High ?	High →	High →	
Full in buildings, less in district								
Plummet(IV-C	Low - - →	High(peers) - - →	High →	High →	Low ?	Low ?	High →	External support
Perry-Parkdale(NDN)	High - - →	Mod/high - - →	High →	Mod →	0	0	High →	
Banestown(NDN)	Low ?	High ?	High ?	High ?	Low ?	Low ?	High ?	
Moderate to full for specialized population								
Astoria(NDN)	Mod/high ?	Mod - - →	Low - - →	High ?	Low →	0	Low/mod ?	Centralized authority, institutionalization
Calston(NDN)	High ?	High(early) Low(later) ?	High ?	Mod/high ?	Low →	Low →	Low/mod ?	Envir. turbulence
Lido(NDN)	High - - →	High - - →	0 0	High →	High →	High →	High ?	External support
Minimal								
Burton(NDN)	0	Low - - →	Low →	Low →	0	0	Low ?	
Dun Hollow(IV-C	0	Low →	High ?	Low ?	0	Low →	High ?	
Proville(IV-C)	0	Low →	0	Low →	Low →	0	Low ?	
Direct cause	0	2	5	6	4	4	3	
Indirect cause	6	7	1	0	0	0	1	
Total	6	9	6	6	4	4	5	

Legend:

→ Immediate cause(not more than 2 steps away from outcome)

- - → Remote cause(more than 2 steps prior to outcome)

? On network, but not causally connected, even indirectly

0 Not on causal network

Hi, Mod, Lo = strength or weight of the variable in the network

BEST COPY AVAILABLE

that "user commitment" sharply distinguishes the sites: it is high and causal in Masepa, Tindale, and Plummet; moderate/high and causal in Astoria; and low and immediately causal in Dun Hollow and Proville. So user commitment makes a real difference either by its presence or its absence in determining percentage of use. "Building endorsement" has a similar but weaker pattern, as does "teacher-administrator harmony." The clear implication is that district endorsement (almost uniformly high in the 12 sites) and even central office pressure are not determinative of percentage of use as much as the sentiments of those people at the building level who must get along together through the strains of implementation.

Turning to the *demands/fit* cluster, we can see that "implementation requirements" and "program-district fit" are most frequently noted as causal———but there is no clear high-to-low patterning for these, nor for the other variables in the cluster, with the possible exception of "user fit." This suggests again the importance of user commitment (here present in the form of implied workability of the innovation for users) in predicting percentage of use. As we have already seen, the general question of "fit" is intimately bound up with the question of administrative latitude for making changes in the innovation. On balance, the ebb and flow of such changes———or their prohibition———is not very clearly relatable to final percentage of use.

In the *assistance* cluster, we can see that "adequacy of preparation" is not a good predictor. But "assistance" offered during the course of implementation is seen as causal in 9 of 12 sites, and is clearly fuller in high-percentage-of-use sites. Its absence in Dun Hollow and Proville is decisively causal in reducing percentage of use.

So far, the bulk of our predictors have had an indirect, long-linked path to the percentage of use outcome. Our two final clusters are much more directly causal. In the stability cluster, note that "user skill/ mastery" is high and immediately causal in Masepa, Tindale, Plummet and Perry-Parkdale, and low and immediately causal in Burton. "Stabilization of use" works according to the same principle, with Tindale and Plummet high, Perry-Parkdale moderate, and Burton and Proville low. Here as in the rest of the Chart, Lido is a modestly deviant case. The KARE innovation was being stably used during most of its life, but its percentage of use was not as full as it could have been, even for the specialized population of marginal science students it was being employed with. Here we can probably invoke as explanations the change in principals, reduced need for the program because of less high school crowding, and the dropping motivation of the program's advocate and users.

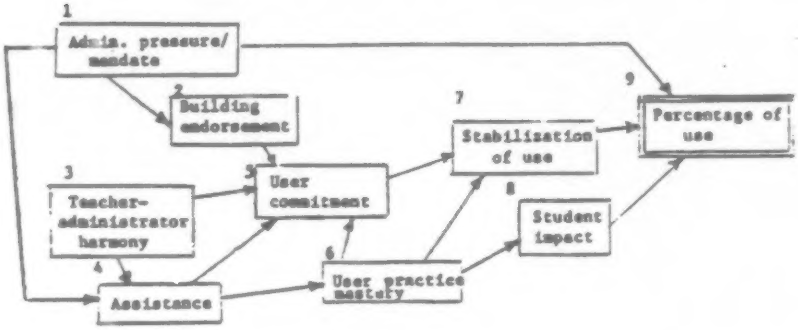
We should note that, contrary to reasonable expectation, stability of program staff and of program leadership do not show any straightforward relationship to percentage of use.

Finally, we look at the question of student impact. Here we note that such impact, sometimes conceptualized in the networks as "program success," does have an immediate causal influence on percentage of use at the high-percentage of use sites Carson, Tindale, Plummet, and Perry-Parkdale, and a remote influence at Masepa. In striking contrast, the variable has no causal connections for any of the other, lower-percentage-of use sites: the idea of student impact (high or low) is in effect decoupled from how widely the program is used across the school or district.

To summarize what we have found: it appears that higher percentage of use is more likely in sites where there is administrative pressure to implement (with or without a system-wide mandate), coupled with sustained *assistance* to users, who, along with their principals, are *committed* to the innovation, endorsing it. The assistance, in a positive climate (*teacher-administrator harmony*) and with continued use, tends to lead to greater *user mastery*, *stable use*, and higher *student impact*. Given all these circumstances, the innovation tends to be used by many or all of the potential users in the school and the district. If the circumstances are weak or absent, less-extensive implementation is typical. To those wishing for a rational approach to innovation, what could be more fitting? The picture is one of reasonableness and coherence.

These findings can be displayed in this derived causal model:

Fig. 23: Factors Predicting Percentage of Use

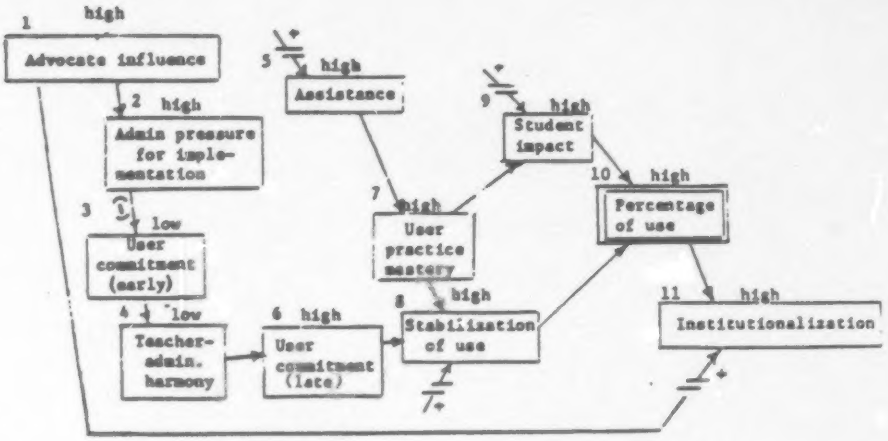

1
Admin. pressure/ mandate
2
Building endorsement
3
Teacher-administrator harmony
4
Assistance
5
User commitment
6
User practice mastery
7
Stabilization of use
8
Student impact
9
Percentage of use

The model suggests several main routes to high percentage of use. One, at the top, involves direct exertion of administrative influence(1,9); another emphasizes commitment development and stabilization of use(2, 5, 7, 9); and the third uses assistance(4) to develop commitment(5), practice mastery(6), and student impact(8), along with stabilization of use(7). But this model is a "smoothed" one, drawing from separate variables across 12 idiosyncratic networks. We need to see how the process actually works at particular sites, and whether there are "families" of sites showing characteristic causal patterns---and whether they resemble the paths suggested here.

Scenarios Leading to High Percentage of Use

Do the high-percentage of use sites fall into a common scenario? Roughly speaking, Tindale and Masepa do---and it is rather like the outline above. First a Tindale excerpt:

Fig. 24: Commitment and Practice Mastery as Routes to High Percentage of Use: Tindale (IV-C)

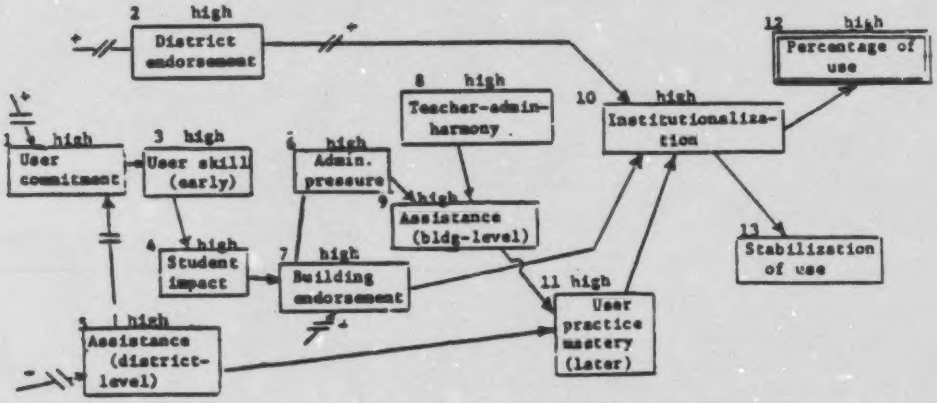

1 high
Advocate influence
2 high
Admin pressure for implementation
3 low
User commitment (early)
4 low
Teacher-admin. harmony
5 high
Assistance
6 high
User commitment (late)
7 high
User practice mastery
8 high
Stabilization of use
9 high
Student impact
10 high
Percentage of use
11 high
Institutionalization
+
+
+
+

+Influence of other variables not discussed.

This net excerpt resembles the proposed model reasonably well. We can see both the commitment-development(2, 3, 4, 6, 8) and the practice mastery (7, 8, 9, 10, 11) streams as leading to stabilization of use and student impact, thence to high percentage of use. Note that initial administrative pressure(2) dampened user commitment(3) and jeopardized teacher-administrative harmony(4); efforts to restore harmony then led to increased user acceptance(6). But the mastery stream was probably more critical. We add the institutionalization(11) variable here because it figures in some scenarios to follow. Note that advocate influence did induce administrative pressure, but did not operate directly on percentage of use, though it was a force for institutionalization.

The network at Masepa was also a reasonable analogue of our proposed model, though it turned out to be considerably more complex. See Fig. 25.

Fig. 25: Commitment and Practice Mastery as Routes to High Percentage of Use; Masepa (NDN)

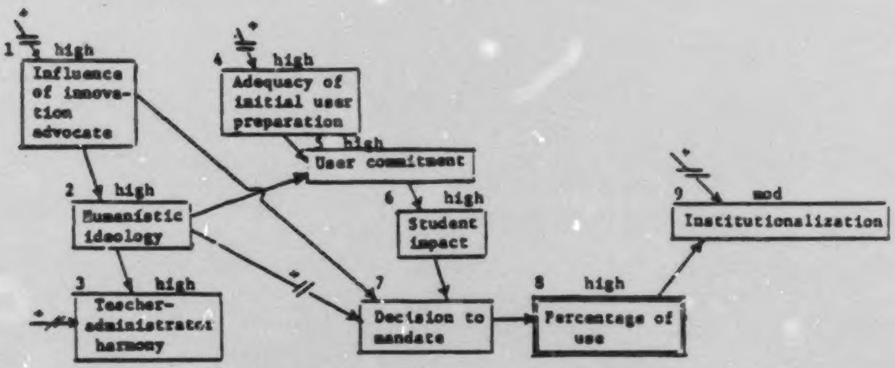

2 high
District endorsement
12 high
Percentage of use
8 high
Teacher-admin-harmony
10 high
Institutionaliza-tion
1 high
User commitment
3 high
User skill (early)
6 high
Admin. pressure
9 high
Assistance (bldg-level)
4 high
Student impact
7 high
Building endorsement
13
Stabilization of use
11 high
User practice mastery (later)
5 high
Assistance (district-level)

+ Influence of other variables not discussed.

Here we see that early assistance(5) increased both commitment(1), and early as well as late user practice mastery(3, 11). Student impact(4) early in the process also operated to increase building endorsement(7), add administrative pressure(6) for further implementation, and induce more assistance(9), in a kind of "virtuous cycle" of expanding implementation. Note that institutionalization(10) here was seen as a basic set of decisions, aided by district endorsement(2), and in turn enabling wider percentage of use(12) (through the decision to mandate the program), and increased stabilization of use(13).

But high percentages of use can come about through simpler means, with minimal attention to practice mastery as such. That picture appears in Carson, also a high-percentage-of-use site.

Fig. 26: Administrative Pressure and Commitment as Routes to High Percentage of Use: Carson (IV-C)

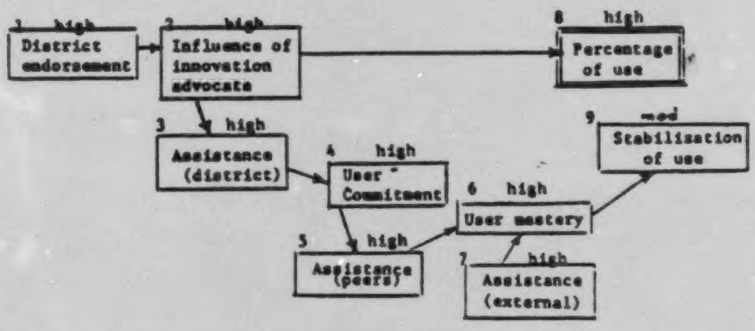

1 high
Influence of innovation advocate
4 high
Adequacy of initial user preparation
5 high
User commitment
2 high
Humanistic ideology
6 high
Student impact
9 mod
Institutionalization
3 high
Teacher-administrator harmony
7
Decision to mandate
8 high
Percentage of use

+Influence of other variables not discussed

At Carson, the fate of the program was strongly influenced by the humanistically-oriented superintendent(1, 2). The program did not require substantial gains in user skill, so early preparation(4) served to increase commitment(5), as did the shared ideology(2); committed users achieved impact(6), which along with the superintendent's strong influence(1) resulted in the decision to mandate the program(7), thus boosting its official percentage of use(8) to 100. Institutionalization followed.

The scenario at Banestown was even more stripped-down:

Fig. 27: Administrative Influence as a Route to High Percentage of Use: Banestown (NDN)


1 high
District endorsement
2 high
Influence of innovation advocate
8 high
Percentage of use
3 high
Assistance (district)
4 high
User Commitment
9 mod
Stabilization of use
6 high
User mastery
5 high
Assistance (peers)
7 high
Assistance (external)

Here a high percentage of use(8) was achieved essentially through the decision-making and influence of the innovation's main advocate(2) in the central office. Users got district level assistance(3) and achieved practice mastery(6) through continued peer assistance(5), resulting in moderately stabilized use(9)-----but all that was decoupled from the basic decision to use the innovation, a pull-out remedial reading program operating at its maximum scope in the schools involved. It could be argued, of course, that for a larger-scope innovation, or minus the assistance and stabilization, the central office edict would not have sufficed--an argument we can test later by looking at a site (Proville) where precisely that happened.

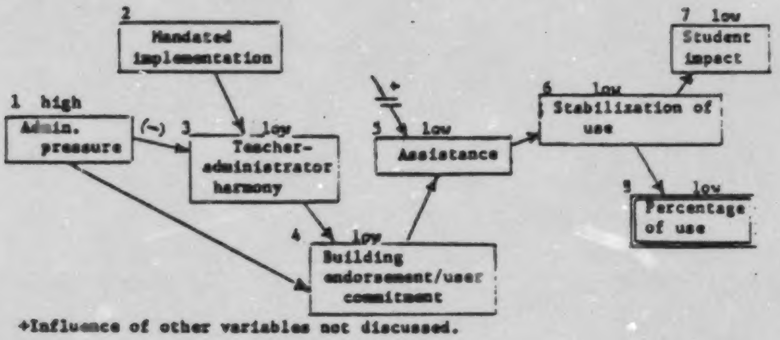
We will not detail the nets for the two remaining high-percentage-of-use programs, both of them subsystems. In Perry-Parkdale, the route to the full use of the EBCE work experience program was essentially through user commitment and mastery, with a minimum of external administrative pressure. The Plummet alternative school also stressed the user commitment/mastery route, with some local administrative pressure. The program staff developed into a strongly cohesive, assistance-giving unit. In addition, there was a new wrinkle: strong external support from the district and community agencies alike operated directly to increase percentages of use.

Scenarios Leading to Low Percentage of Use

In general, with a number of bendings and qualifications, the model we have proposed seems plausible. For innovations that require considerable user skill, all three streams (pressure, commitment, mastery) probably need to be present; for undemanding ones, administrative action alone can probably prevail. But for a good test of the model, we should look at sites where percentage of use was minimal, or operative for a special population----to see whether the streams we have noted are not followed (more precisely, have "low" values on the variables involved).

The most extreme case to make this test on is Proville. The network extract looks like this:

Fig. 28: Administrative Pressure, Lack of Assistance and Low Commitment as Routes to Low Percentage of Use: Proville (IV-C)


2
Mandated implementation
1 high
Admin. pressure
(−)
3 low
Teacher-administrator harmony
4 low
Building endorsement/user commitment
+
5 low
Assistance
6 low
Stabilization of use
7 low
Student impact
8 low
Percentage of use

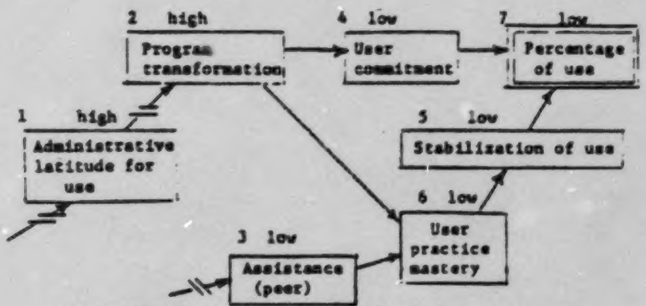
+Influence of other variables not discussed.

The clear moral is: pressure to implement unaccompanied by assistance or means to induce commitment is unlikely to achieve more than minimal percentage of use. At Proville, the administrative pressure(1) simply alienated principals and teachers(3), who never developed commitment(4). They never asked for assistance, and little was forthcoming anyway(5) because the central office program coordinator had other, more pressing fish to fry. The destabilized innovation(6) died on the vine. (We might note that in the one high school at Proville where the principal pushed the idea and got assistance to users, the program flourished briefly.)

At Dun Hollow, another low-percentage-of-use site, there was hardly any administrative pressure beyond an acceptance of the external developer's wish to field test the innovation. Later, building endorsement dropped substantially. Lack of assistance led to weak commitment and destabilization of program staff. User mastery was high, but was self-developed, and disconnected from the percentage of use outcome. It looks as if a minimum of administrative pressure is needed along with commitment-developing and stability-assuring mechanisms.

We can see this illustrated a bit more clearly in the case of Burton, where users had full administrative latitude. They could try as much or as little of the legal education program as they liked, since it was a "pilot year:"

Fig. 29: Administrative Latitude and Program Transformation as a Route to Low Percentage of Use: Burton (NDN)



2 high
Program transformation
4 low
User commitment
7 low
Percentage of use
1 high
Administrative latitude for use
5 low
Stabilization of use
6 low
User practice mastery
3 low
Assistance (peer)

+Influence of other variables not discussed.

The latitude(1) enabled users to revamp the program(2), mainly by selecting a few parts they liked and discarding the rest—even those the developer considered essential. That transformation both dampened their commitment(4) and made user mastery(6) minimal, which was already low because no centrally--provided assistance was given, and because local norms discouraged peer-provided assistance(3). Naturally, stabilization of use(5), and resulting percentage of use(7), were minimal. Expect little, get little.

Scenarios for Moderate to Full Use (With Specialized Population)

We will not present net excerpts here, since they represent an intermediate case between the high and low sites we have been reviewing. In brief, the implementation at Astoria showed that a mandated program especially in a centralized system, can achieve full percentage of use for a limited population (first-graders), if at least moderate levels of assistance and commitment are present (aided here by strong teacher-administrator harmony) and some (not extreme) administrative latitude is offered.

The picture at Lido involved all the variables of our model, minus administrative pressure, but with administrative support and external assistance. Users used the latitude they had to select from the innovation what they needed to buttress an ongoing environmental education program, to which they were committed.

Finally, the Matteson 4D reading program at Calston achieved user commitment and mastery through assistance, with only moderate administrative pressure. These led to moderate-plus stabilization and low to moderate student impact. But the issue of percentage of use was completely disconnected from such matters, depending entirely on the instability of program staff and leadership that ensued from the citywide fiscal crisis.

Conclusions

For innovations that require at least a modicum of user skill, it looks as if high percentages of use can be assured by maintaining some administrative pressure for implementation, providing assistance sufficient to enable user practice mastery and student impact, and supporting the development of user commitment. Assistance can be less crucial for innovations that ask less of users. But teacher-administrator harmony is important to facilitate the process of commitment development and stabilization.

Administrative pressure by itself gets nowhere, judging from our classic Proville case. The barriers of teacher-administrator conflict, user non-commitment and lack of skill are too substantial. Administrators can only get away with mandating an innovation and achieving higher percentages of use if reasonable attention is given to the development of commitment and of skill.

Not surprisingly, if pressure, commitment and mastery are all low, low percentages of use are guaranteed.

When administrators--with or without pressure---give users latitude to adapt the innovation, much depends on what the latitude is used for. If to reduce load on users in a laissez-faire fashion, low percentages of use are likely. But if users already have reasonable commitment to the innovation (as at Perry-Parkdale and Plummet) or to some other program which the innovation can further (as at Lido), then latitude-giving can feed program development and increase percentage of use.

Institutionalization

Introduction/Overview of Findings

As we have indicated, we defined institutionalization as the presence of organizational conditions that signalled routinization of the innovation. In short, we looked for structures, procedures and organizational sentiments that were indicators of the innovation's being "built in" to the school and district. Such organizational conditions would transcend mere continuation, which might occur simply because a principal or a key user liked the innovation or found it more convenient than an alternative practice.

In brief, we found that about half our sites showed reasonably strong institutionalization; it was aided by administrators who cared enough to exert pressure, supply assistance, and make the organizational changes necessary to assure continued, committed use by a large percentage of eligible people at the site. These effects were more predictable when people stayed on the job, rather than moving elsewhere.

Degrees of institutionalization: examples. At field sites, we looked for organizational conditions supporting institutionalization, asking informants not only if the innovation would be around in the following and subsequent years, but why they thought so. In addition, each analyst filled out a standard checklist chart. A sample chart, showing the moderate degree of institutionalization at the Banestown site, appears on the next page. The conceptualization underlying the chart is drawn from Yin et al. (1978). In brief, we were looking for a series of supporting conditions related to current operations (such as whether competing practices had been eliminated); for the completion of important passages (such as moving from soft to hard money, or

Chart 44: Institutionalization, Banestown Site

Supporting conditions	School Level	District Level
Is a core (as vs. peripheral) application	present-temporary	promised
Operating on regular, daily basis	present-temporary	present-temporary
Provides benefits, payoffs to users	present-looks permanent	present-looks permanent
Competing practices eliminated	dubious-weak	dubious-weak
Receives support from:		
Administrators	present	present,partially
Users/staff	present	present soft
Clients (kids, parents)	present	present
Other: external $, laws, etc.		
Passage completion		
Goes from soft to hard money	absent	absent
Job description becomes standard	dubious	dubious
Skills required are included in formal training prog.	absent	absent
Organizational status is estab./part of regulations	absent	absent
Routines established for supply & maintenance	present-temporary	present-temporary
Cycle survival		
Survives annual budget cycles	absent	absent
Survives departure or introduction of new personnel	promised	promised
Skills are taughts in successive cycles	present-temporary	present-temporary
Achieves widespread use throughout organization	present-temporary	present-temporary
Survives equipment turnover or loss (includes materials)	n/a	n/a

getting the use of the practice written into job descriptions); and for the survival of the innovation through several organizational cycles (typically occurring during a school semester or year and including movement through new budgets and new personnel).

The analyst also commented on and amplified the chart with accompanying text. For example, at Banestown, the analyst noted that though the remedial lab had proved to be a better solution to needs than the existing practices(Title I aides or in-class work), and thus had good support both from teachers and the central office, other signs were not good. For instance, the district budget line for the Catch-Up lab was still drawn from soft money; supervisory responsibility for the program had shifted and might shift again; and the lab did not have a "firm institutional status." Still, the analyst was more optimistic than the chart suggests, emphasizing central office administrators' and users' belief in the demonstrated need for the project and the strength of their support. He noted the existence of similar labs at four other schools in the county ("cutting off the lab at the elementary school would jeopardize the institutional rationale at the middle school"). The analyst also invoked "local habits of innovating... New practices are hard to get started, but once they get started, they are even harder to discontinue," and quoted a key user:

> They would keep it going unless something really wrong would happen. That's the way it is around here. Things keep going as long as there aren't big waves.
> (Molly E.,lab teacher)

Finally, the analyst pointed out that recent budget cuts had not eliminated the lab at another school, and that the two lab teachers there were on the county payroll and would almost surely not be fired. The text concludes:

> The most likely prediction is that the labs are high on the list of projects to be supported once core classroom practices have been assured. The labs would be sacrificed before funds for teachers or core equipment or instructional materials. Beyond that, the labs are high on the list of priorities for "special programs."

If we turn to a site which showed high institutionalization, the picture on the site chart is quite different. For example, at Tindale, the analyst, without exception, gave a rating of "Present, looks permanent" to each cell of the chart. The text justifies the ratings. The analyst pointed out that the Tindale Reading Program had "replaced the old basic English curriculum and functions like any other curriculum in the school." All users interviewed saw the program as "built in," and "some had never known it not to be." Though continued in-service training was not contemplated formally, there was a "large core of users who may be called on to aid the new teacher in the program." The ultimate measure of institutionalization, ironically enough, appears in this sentence:

> In several years, it will be revised, just as all other curricula are revised on a regular basis.

Finally, let's turn for one more example to a site where institutionalization was essentially absent. At the Burton site, the central office social studies coordinator defined the IPLE legal education unit as "experimental" and gave teachers a license to "pick and choose" at will from the IPLE materials. In practically all cells of the chart, the analyst gave a rating of "absent." The only weak exceptions were that one user (of four) was using the materials fairly regularly, said they "vastly improved teaching", and were "highly beneficial to kids." A few students said they liked the exercises, and the social studies coordinator was supportive.

The chances for institutionalization looked very slim. In particular, the community-based and other experiential activities of the program were a very poor fit to users' usual practices. But ultimately, whether the IPLE materials would ever be institutionalized depended on curriculum review committees. One user noted:

> If the revision work is done by an IPLE supporter or two, then IPLE would get built in. If it's not done by a supporter, IPLE would be used less, much less. Teachers are free to use as much of a revised curriculum as they want or need.

So even with IPLE "in" the curriculum, which seemed unlikely given the existence of only one strong supporter, latitude for users to "pick and choose" would continue. And the same user pointed out:

> Teachers get no rewards for using new programs. We do new things all the time, so IPLE isn't special... And besides, unless we implement IPLE as a whole program, not just pieces of it, teachers will resist it because of all of the handout copying we have to do now. We don't have a clerical staff to do that.

Another user, along with the coordinator, believed that IPLE might get written into the U.S. history, government or civics courses ("Our revision committee for U.S. history is packed with IPLE users"). But the prospects still looked very uncertain.

The Extent of Institutionalization

Chart 45 arrays our twelve sites according to degree of institutionalization; it is drawn from the site-specific charts and accompanying text, like those we have just reviewed. There is plenty of variation. We have 3 sites with high institutionalization, 3 more with high to moderate, 1 moderate, 3 low, and 2 where the only conceivable rating was "Nil."

Chart 45: Institutionalization at the School and District Level, By Sites

		Supporting conditions	Passage completion	Cycle Survival	Other Supporting Conditions	Over-all Rating
Plummet(IV-C)	school district	√̲ √̲	√̲ √̲	√̲ √̲	State daily attendance funds	High
Tindale(IV-C)	school district	√̲ √̲	√̲ √̲	√̲ √̲	Changing student population increases need for program	High
Astoria (NDN)	school district	? √̲	√̲ √̲	√̲ √̲	District mandate	High
Masepa(NDN)	school district	√̲/√ √̲	√ √	√̲ √̲	District mandate.	High/mod.
Lido(NDN)	school district	√̲ √̲	√̲ √̲	√̲/0 √̲/0	Community, board interest	Mod/high
Carson(IV-C)	school district	√/? √̲/√	√ √/?	√/? √/?	District mandate Received dissemination grant for next year	Mod
Banestown(NDN)	school district	√/? √/?	?/0 ?/0	√?/0 √?/0	Strong central office commitment	Mod
Calston(NDN)	school district	√/? 0	?/0 0	? 0		Low
Perry-Parkdale (NDN)	school district	√/? √/?	0 ?/0	0 0	Dissemination funds anticipated	Low
Burton(NDN)	school district	√/0 0	0 0	0 0	"Pilot" year; program may go into curric.	Low
Dun Hollow(IVC)	school district	?/0 0	0 0	0 0	Field testing; future use uncertain	Nil
Proville(IVC)*	school	? ?	0 0	? ?		Nil*

√̲ Present, looks permanent
√ Present, looks temporary
? Dubious, weak, uncertain
0 Absent

*Innovation currently discontinued. For comparison, these estimates are for the preceding year.

BEST COPY AVAILABLE

If we note that a rating of "moderate" institutionalization was given when the typical cell entry was "present," but "temporary" or "uncertain," it seems fair to say that only the top five sites should be considered reasonably well institutionalized.

If we compare this figure to data collected in the survey of the larger sample of 146 sites, the picture is somewhat different. Asked whether the innovation would "be around two years from now," 35% of administrators said "Yes," another 60% said, "Yes, with changes." (The changes seemed a blend of adaptation and possible expansion). But the institutionalization picture was weaker. Asked about the presence of 7 indicators*, the typical administrator said that 4 of the 7 were in place, suggesting less-than-full institutionalization. To put it another way, only 21% of the survey sites had all or nearly all institutionalization indicators in place, whereas nearly half our field sites did. The difference may be a function of the indicators chosen; some of those in the survey did not appear in our assessment, and these can be seen as more "demanding" (ex: curriculum incorporation, written guidelines for use, and hiring of new staff to support the practice). Precise comparisons are not possible, but a reasonable conclusion is that institutionalization in our sites is occurring at a roughly similar level to those in the larger sample.

We can see also from Chart 45 that program sponsorship (IV-C or NDN) is no guarantee of high institutionalization, nor of low. And it seems clear that the "crunch" conditions for institutionalization are more frequently to be found in the "passages" and "cycles" sections: even some low-institutionalizing sites have "supporting conditions" in place. A look at site charts showed that "benefits to users," "operating on a regular, daily basis," and "support from clients" were present in Carson, Calston, Burton and Perry-Parkdale, though they had few or no items present in the "passages" and "cycles" lists. In short, favorable present operations are no substitute for organizational routinization.

---

*The seven items included training for new staff, training for current staff, incorporation into curriculum, written guidelines for use, purchase of replacement supplies, hiring new staffs to support the practice, and budget line item.

Explaining Institutionalization

What might account for differing degrees of institutionalization in our sites? Our first step was to examine the 12 causal networks, looking at variables that immediately preceded institutionalization, plus those that were more remotely connected. Chart 46 displays those variables, arranged in clusters, that seemed to discriminate most clearly between high and low institutionalizing sites.* Let us look at the results, cluster by cluster.

Funding. It is often suggested that the presence of substantial external funds reduces the chance for institutionalization. The data give only weak support to this idea. Though external funds are somewhat more immediately-causal for institutionalization in low-institutionalizing sites (Carson, Perry-Parkdale and Proville, as vs. Plummet), and low-institutionalizing sites more often have low internal funds as a contributing factor, the relationships are not strong.

Pressure. It's quite clear that some degree of administrative pressure to implement, with or without a mandate to use the innovation district-wide, is associated with higher institutionalization (four of the six high sites).

---

*For clarity, we use here a somewhat more simplified display than was true for the "percentage of use" outcome.

Chart 46: Antecedents of Institutionalization

	FUNDS		PRESSURE		ENDORSEMENT			DEMANDS/FIT				ASSISTANCE	STABILITY			IMPACT	PERSONNEL CHANGE			
High to high/moderate institutionalization	Internal funds	External funds	Admin pressure	Mandate	Bldg. endorsement	User commitment	Teacher-admin. harmony	Implementation requirements	Program-school fit	Program transformation	Org transformation	Assistance	Practice mastery	Stabilization of use	% of use	Student impact	Career advancement motivation	Job mobility	Stab. of leadership	Stab. of staff
Plummet(IV-C)		High →	High →			High --→	High --→	High →		High --→	High →	High --→	High →	Med →		High →				High →
Tindale(IV-C)	Low --→	High --→	High --→			High →	Low --→	High --→				High --→	High --→	High →	High →	High →			High →	High →
Astoria(NDN)				→		Low →	High --→	High --→	Low --→	High --→		Med --→	Low --→					Med →	Low →	
Masepa(NDN)		High --→	High --→	→	High --→	High --→	High --→	High --→	Low --→	Low --→	High →	High →	High →			Med --→				
Lido(NDN)	Low --→	High --→			High --→	High --→		High →	High →	High →		High --→		Med →	Med →	Med →			High →	High →
Carson (IV-C)	Low --→	High →		→	High →	High --→		High →	Low →		High →	High --→			High →		High →	Med →	Low →	
Moderate to low or no institutionalization																				
Jamestown (NDN)	Low →	Low →				High --→		Low --→		High --→	Low --→	High --→	High --→	Med →			High --→		Low →	Low →
Calston(NDN)	Low →	High --→			High --→	High --→	High --→	High --→	High --→	High →	Low →	Mixed --→	High --→	Med/high →			High --→		Low →	Low →
Perry-Parkdale(NDN)	Low --→	High →			Low --→	High --→		High →	Low →	Low --→	Low →	High --→	High --→	Med --→	Low →	High →	High →	High →		
Burton(NDN)	Low --→	High --→			Low →	Low →		Low →	Low →	High →	Low →	Low --→	Low →	Med →	Low →	Low --→				
Dun Hollow(IV-C)					Low →	Low →	Low --→	High --→				Low --→		Low →	Low →					
Proville(IV-C)	Low →	High →				Low →											High --→	High --→	Low →	Low →
Totals: immediate	3	5	1	3	2	5	0	3	3	3	6	1	4	7	6	4	2	4	7	6
remote	5	5	2	0	5	7	6	8	4	3	1	10	3	1	0	3	3	0	0	0
Total	8	10	3	4	7	12	6	11	7	6	7	11	7	8	6	6	5	4	0	0

→ Immediate cause (not more than 2 steps away from outcome)
--→ Remote cause (more than 2 steps prior to outcome)
(blank) Not causally connected, or not on network

High,Med,Low = strength or weight of the variable in network

BEST COPY AVAILABLE

400

401

Endorsement. Here too there are clear differences. User commitment, if low, tends to hinder institutionalization. The only deviant case is Astoria, where less-committed users were supported carefully in their implementation of the mandated EPSF program. The same thing appears true for building endorsement. Lack of endorsement serves as a brake on institutionalization, though positive endorsement does not necessarily ensure it. And we note, too, that teacher administrator-harmony seems important only in a remote way, a sort of facilitator for high-institutionalizing sites. (We've already noted how at Tindale, the exception here, had low harmony at first because of administrative pressure; accommodative efforts and increasing user mastery improved it later on.)

Demands/fit. We can see in this cluster that high-institutionalization sites are not necessarily those with higher implementation requirements, or with poor program-school fit. Rather, the issue seems to be the sorts of transformations that occur as program encounters organization. Weak institutionalization happens (Calston, Perry-Parkdale, Burton) when there is little organizational transformation--and in two of three cases this is accompanied by heavy program transformation. If organizational transformation is high (Plummet, Masepa, Carson) then the chances for institutionalization are also higher. This is congruent with our earlier comment that institutionalization amounts to changes in organizational routines.

Assistance. We also note that lack of assistance may be associated, rather remotely, with low institutionalization.

Stability. But the issue does not seem very clearly to be user mastery, nor stability of use. Rather, assistance may have its effect on institutionalization through eventually encouraging higher percentages of use. Note that in Plummet, Tindale and Lido getting two of the three stability factors results in moderate to high student impact, itself seen as a direct cause of institutionalization. Perry-Parkdale is the deviant case here: skillful, stabilized use was achieved for a limited population of students, but institutionalization, as we shall see, was not managed well because of personnel shifts, weak building endorsement, and funding uncertainty.

Personnel movement. The items in this cluster refer to a people-specific form of stability/instability. We can see clearly that *low stability* in staff and/or leadership, or high job mobility(which may be driven by *career advancement motivation*, as at Banestown, Calston, Proville) tends to mean lower institutionalization. Strongly-institutionalized programs are supposed to be able to withstand the departure of key personnel, but the message of this part of the table is that such conditions are rare (only in Astoria do we see an exception).
When key staff or leaders depart, the potential for destabilization, as already noted, is high. Those who own and manage the innovation are signalling their disengagement, so to speak.

To summarize: it appears that higher institutionalization is likely when there is *administrative pressure* to implement the program, no *serious resistance* (seen in low building endorsement or weak user commitment), and a reasonable degree of *teacher-administrator harmony*.
If implementing the program results in some degree of *organizational transformation*, does not have serious *assistance* gaps, and ends with use by a fairly large *percentage of eligible users* who along with program leaders *remain* in the situation, then stronger institutionalization is likely.

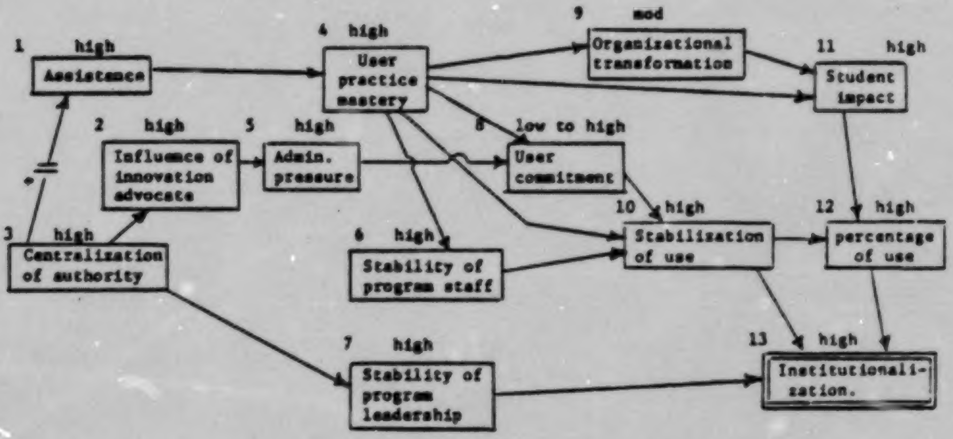
Once again, however, this is a smoothed set of findings, drawn from ratings across the 12 sites. To illustrate institutionalization dynamics clearly, we need to look at more-specific causal pathways as they played out in particular sites.

Scenarios Leading to High Institutionalization

It developed that our twelve sites fell into four families or "scenarios" for institutionalization: two were high- and two low-institutionalizers. The two routes to high institutionalization we called "mandated, stable use" and "skillful, committed use". Let's illustrate and discuss each.

Mandated, stable use. Altogether four of our sites (Tindale, Astoria, Carson and Masepa) followed this general scenario. The prototypical example is Tindale. The network excerpt looks like this:

Fig. 30: Mandated, Stable Use as a Route to Institutionalization: (Tindale (IV-C)



1 high
Assistance
2 high
Influence of innovation advocate
3 high
Centralization of authority
+
4 high
User practice mastery
5 high
Admin. pressure
6 high
Stability of program staff
7 high
Stability of program leadership
8 low to high
User commitment
9 mod
Organizational transformation
10 high
Stabilization of use
11 high
Student impact
12 high
percentage of use
13 high
Institutionalization.

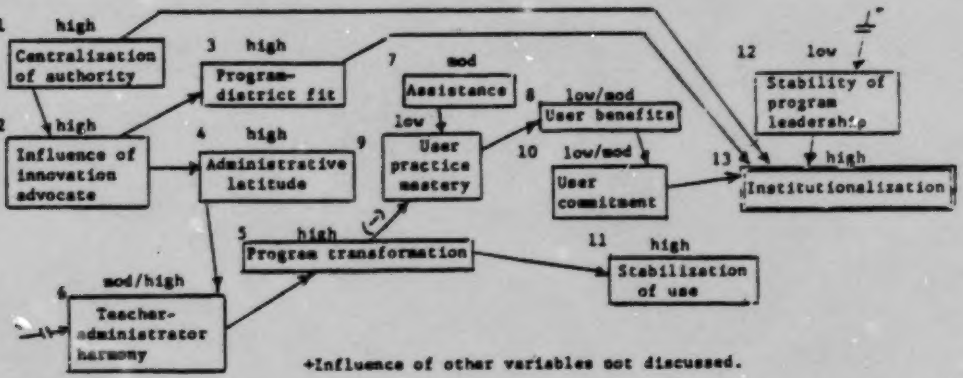
+ Influence of other variables not discussed

Here, a powerful central office administrator (2), the director of curriculum and special projects, working from a centralized power base (3) put considerable pressure on users (5) to implement the new locally-developed reading program. Initially, this lowered users' commitment (8);

they resented and feared the pressure. But substantial assistance (1) was supplied, which increased users' practice mastery(4)a good deal and subsequently their commitment(8). In addition, modest organizational re-arrangements(9) including revised scheduling, pupil rotation, and teacher teaming were made, increasing student impact (11). User mastery and commitment, along with stability of program staff (6) led to stabilized use (10), which both increased percentage of use (12), and led to institutionalization (13). Stability of program leadership (7) also aided institutionalization. The general picture is one of administrative decisiveness, accompanied by enough assistance to increase user skill, ownership and stable use in the context of a stable system.

The three other sites sharing this scenario varied in particulars, of course, though all entailed a mandated use of the program. In Astoria, the mandate flowed even more directly from centralized authority, and stability was achieved through program simplification rather than through user mastery, as follows:

Fig. 31: Mandated, Stable Use as a Route to Institutionalization: Astoria (NDN)

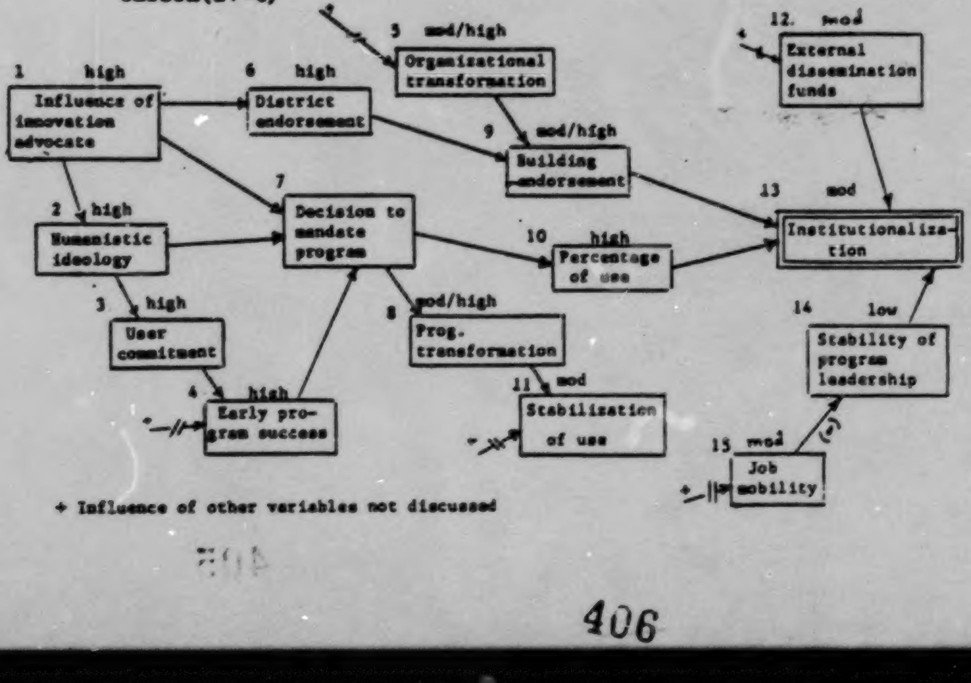

1 high
Centralization of authority
2 high
Influence of innovation advocate
3 high
Program-district fit
4 high
Administrative latitude
5 high
Program transformation
6 mod/high
Teacher-administrator harmony
7 mod
Assistance
8 low/mod
User benefits
9 low
User practice mastery
10 low/mod
User commitment
11 high
Stabilization of use
12 low
Stability of program leadership
13 high
Institutionalization
(-)
+

+Influence of other variables not discussed.

In Astoria we have a matter-of-fact exercise of central power. The central office advocate(1), using the advice of a district-wide search committee, was able to directly mandate through centralized power(1) the use of an early childhood screening program which fit the district's needs well(3). Both factors led directly to institutionalization. But the advocate said explicitly, "I give the overall direction. How EPSF is implemented is determined by the local school." This provision of administrative latitude (4) furthered local teacher-administrator harmony (6) and allowed them to transform and simplify the program substantially(5), thereby achieving stabilized use(11). It did not matter that users received only moderate assistance(7), had low practice mastery(9), felt few benefits(8) or much commitment(10). The centrally-mandated institutionalization could even survive the departure of its original advocate(12).

The Astoria experience was a "front-end" mandate. At both Masepa and Carson, a demanding innovation was tried out with substantial assistance for some time with one or two generations of users, then mandated at the "back end" for all. The patterns are generally similar: here we'll display only that of Carson:

Fig. Mandated, Stable Use as a Route to Institutionalization: Carson(IV-C)


1 high
Influence of innovation advocate
6 high
District endorsement
5 mod/high
Organizational transformation
9 mod/high
Building endorsement
12. mod
External dissemination funds
2 high
Humanistic ideology
7
Decision to mandate program
10 high
Percentage of use
13 mod
Institutionalization
3 high
User commitment
8 mod/high
Prog. transformation
14 low
Stability of program leadership
4 high
Early program success
11 mod
Stabilization of use
15 mod
Job mobility
(-)
+
+
+
+
+

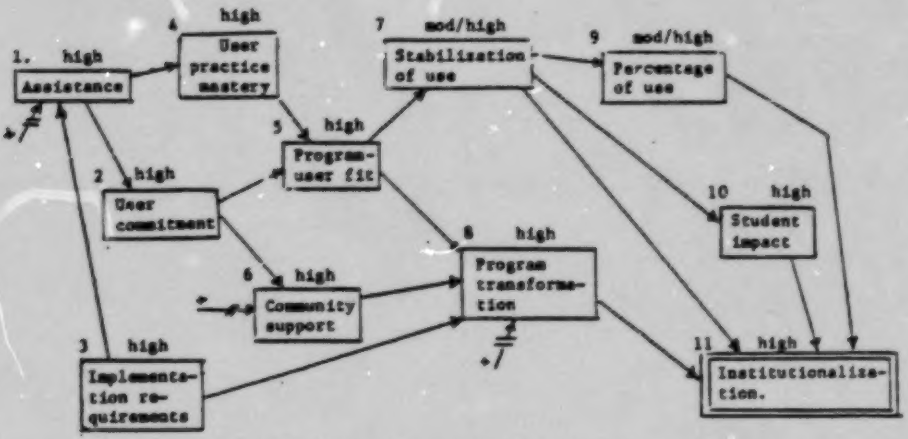
+ Influence of other variables not discussed

At Carson, the exercise of power was moderated by the consent of the governed. The vigorous, charismatic superintendent (1) did much to infuse his strongly-humanistic ideology (2) into the district, which led to strong user commitment (3) to the individualized educational programming plan that they had developed. The program's success (4), along with the ideology itself (it would be "wrong" to deny all students the benefits the early group had received) and the direct influence of the superintendent, led to the decision to mandate the program for all (7). This automatically increased percentage of use (10) and institutionalization (13), which was also supported by high to moderate levels of district (6) and building (9) endorsement. The latter was also aided by the organizational transformations (5) (ex: increased communication and trust) that the innovation had carried in its wake. External dissemination funds (12) aided the prospects of institutionalization, since the innovation had to be in place for visitors to observe it. However, institutionalization was threatened by the departure of the high school principal and the program coordinator (15, 14)

The picture at Masepa was similar, with an even stronger emphasis on the development of user commitment through serious effort, administrative pressure, assistance-aided skill development, and continuing district and building-level endorsement. Here too the mandate came late in the game, after the innovation had expanded to more and more users and demonstrated its value in terms of student impact.

Skillful, committed use. A second scenario leading to moderate/ high institutionalization appeared in Lido, Plummet, and Banestown. The element of mandating was absent. Under these circumstances, it appeared more essential that both skills and endorsement/commitment be present. Note, for example, that either or both could be and were absent in the "mandate" scenario (viz. Astoria, Carson). Here is the picture for Lido:

Fig. 33: Mastery and Commitment as a Route to Institutionalization: Lido (NDN)


1. high
Assistance
4 high
User practice mastery
7 mod/high
Stabilization of use
9 mod/high
Percentage of use
5 high
Program-user fit
2 high
User commitment
10 high
Student impact
8 high
Program transformation
6 high
Community support
3 high
Implementation requirements
11 high
Institutionalization.
+
+
+

+ Influence of other variables not discussed

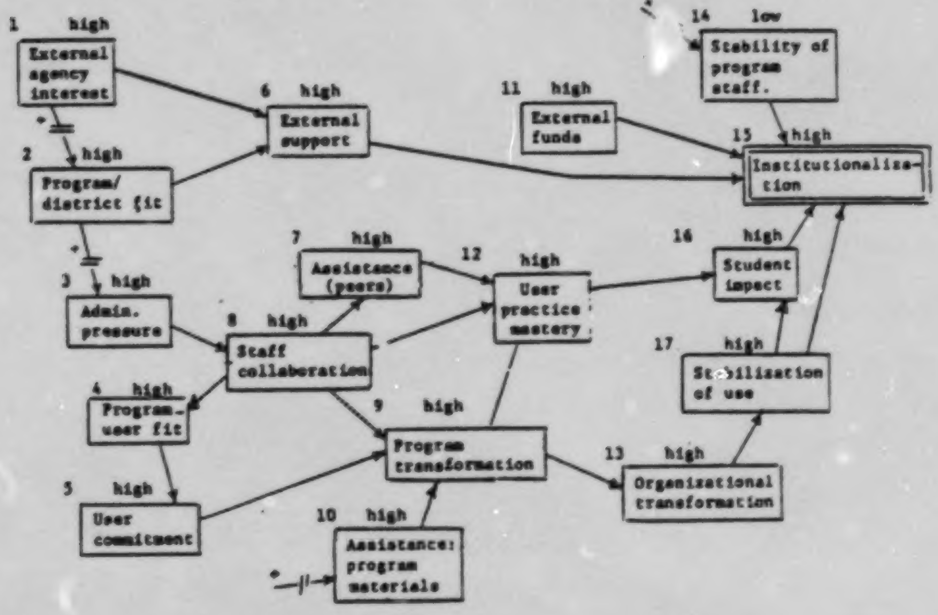
The causal flow looks like this. The KARE environmental studies program had demanding implementation requirements (interdisciplinary, field-oriented "hands-on" learning by students) that led to initial assistance (1) that was strong enough to increase both user practice mastery(4) and commitment (2). User commitment also enhanced and was enhanced by community support (6) for the program's presence in a local park site donated to the school district. Increasingly good program-user fit (5) led toward stable use (7), higher percentage of use (9) as added teachers got involved, and student impact (10) (in this case, increased motivation and academic self-concept). All three led to institutionalization (11).

The KARE program was also the subject of considerable program transformation (8), taking the form of elaboration and development of the larger environmental science program of which it was a part. That program development aided by community support(6) and the implementation requirements(3) also aided institutionalization. The general thrust is one of voluntaristic (non-mandated) development of user mastery and commitment/endorsement as a route to program development and stabilization, thence to institutionalization.

The story at Banestown was quite similar. There too assistance, both at the district and the within-user-team level, led to increased commitment to the innovation (Catch-up remedial reading lab), and to skill in its use; there too considerable program transformation led to stability and student impact. The effects on institutionalization were strong enough at Banestown to overcome the potential destabilization of program leadership and staff threatened by a possible loss of funding.

The third site where a skill/commitment scenario occurred was Plummet. It differed from Lido and Banestown in having a strong organizational-transformation component, along with powerful external community support. The network shows this:

Fig. 34: Mastery and Commitment as Routes to Institutionalization
Plummet (IV-C)


1 high
External agency interest
6 high
External support
11 high
External funds
14 low
Stability of program staff.
15 high
Institutionalization
2 high
Program/ district fit
3 high
Admin. pressure
7 high
Assistance (peers)
12 high
User practice mastery
16 high
Student impact
8 high
Staff collaboration
17 high
Stabilization of use
4 high
Program-user fit
9 high
Program transformation
13 high
Organizational transformation
5 high
User commitment
10 high
Assistance: program materials
+
+
+
+

+ Influence of other variables not discussed

At Plummet, the strong interest (1) of the courts and Teachers Corps led to their active support (6) of the innovation, a new alternative school for delinquent youth to serve as a transition between the courts and the regular Plummet high schools. That continued support, along with other external (11) funds (CETA, state attendance money) was a direct source of institutionalization of the Plummet Alternative Center. The initial concept of the school fit the district's needs well (2). The strong leadership of the charismatic school director (3) induced strong staff collaboration (8); the staff helped each other (7) as they steadily revamped and developed the program (9), drawing on resource materials (10), and developing better fit (4) and commitment (5) in the process. Since the "program" was really the school as a whole, much organizational transformation (13) resulted, and use stabilized (17), leading to student impact (16), which was already substantial because of user practice mastery(12). Institutionalization was threatened by staff instability(14) arising from factors such as burnout, funding uncertainty, and career advancement motivation, but on balance, the state of institutionalization(15) was strong. The main factors of interest here are the active staff collaboration and its consequences for ownership, user mastery, and stabilization of what was basically a demanding program.

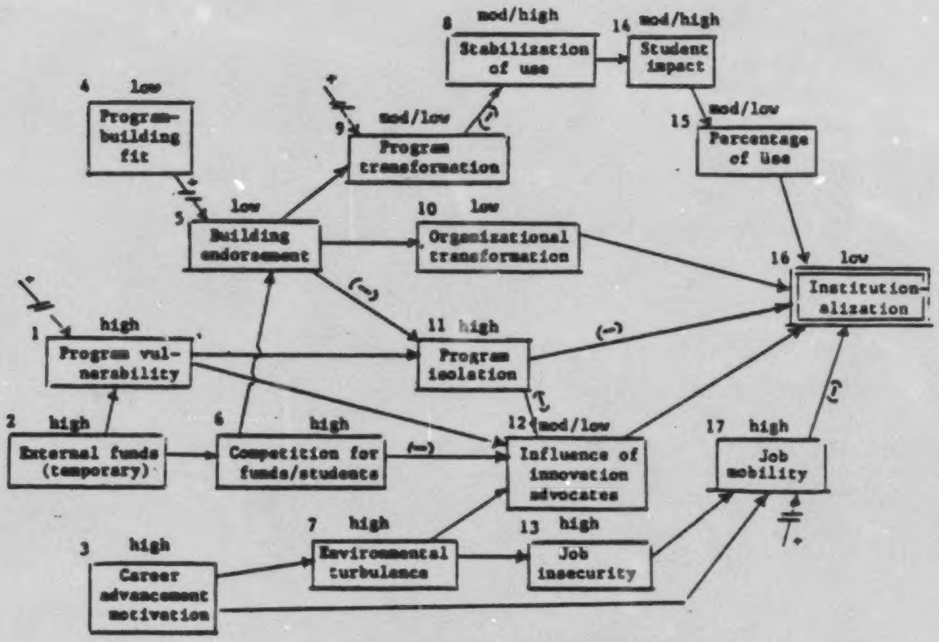
Scenarios Leading to Low Institutionalization

We were able to sort the remaining 5 sites into two families, which we called "vulnerability" and "indifference".

Vulnerability. At Perry-Parkdale and Calston, the innovative programs were quite vulnerable to environmental turbulence. They had no organizational structures to protect them when funding crises struck or advocates departed. So even though user mastery, commitment and stabilization of use were moderate to high, there was little guarantee of durability.

This picture comes very clear if we look at an excerpt from the Perry-Parkdale network:

Fig. 35: Vulnerability as a Route to Low Institutionalization: Perry-Parkdale(NDN)


8 mod/high
Stabilization of use
14 mod/high
Student impact
4 low
Program-building fit
9 mod/low
Program transformation
15 mod/low
Percentage of Use
5 low
Building endorsement
10 low
Organizational transformation
16 low
Institutionalization
(–)
1 high
Program vulnerability
11 high
Program isolation
(–)
2 high
External funds (temporary)
6 high
Competition for funds/students
(–)
12 mod/low
Influence of innovation advocates
17 high
Job mobility
7 high
Environmental turbulence
13 high
Job insecurity
3 high
Career advancement motivation

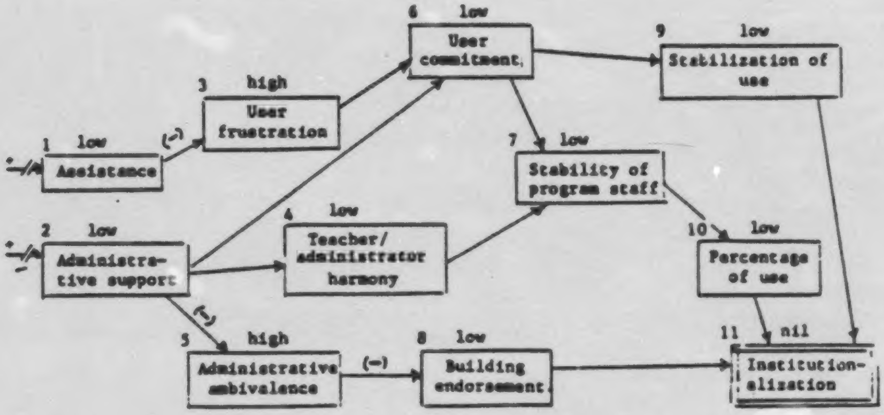
+ Influence of other variables not discussed

The temporary funding of the program (2), a work-experience program for what turned out to be disaffected students drawn from two high schools, increased its vulnerability(1), already high because students, out in the community on their own, could easily behave like "assholes" and embarrass the staff. In effect, the program was competing not only for funds but for students (6). This reduced building endorsement (5), specifically that of the principals. The program's staff tended to withdraw, working in isolation(11); this reduced their effective influence (12) and that of central office advocates. Though the program itself was altered (9) to meet the principals' objections, there was very little alteration in the surrounding district organization or that of the high schools (10). The program's isolation, the lack of organizational supports, and the lowered power of program advocates all weakened institutionalization (16), even though the program was being used stably (8) with good student impact (14), though for only a small percentage of students (15). Institutionalization was even further weakened by the career advancement motivation (3) of key central office people and principals, which induced much turbulence (7) within the district. Job mobility (17) of key program staff was as a result of these and other factors also high. Overall, we have a picture of a strong, promising innovation that was insufficiently protected through strong links to its environment, so that turbulence, movement of key people, and negative attitudes from powerful principals could wreak havoc.

The story at Calston was less complex, but equally bleak. A well-stabilized reading program, Matteson 4D, was seriously jeopardized institutionally because no organizational transformation at all had occurred, so that the program's continuation depended solely, as the site analyst noted, on whether present users would continue in their jobs. But it seemed they would not; Calston was threatened with a severe fiscal crisis which knocked the central office advocate out of her job, and threatened the jobs of a principal and some users.

Indifference. The weakest institutionalization occurred in three sites, Dun Hollow, Proville and Burton, when administrators, in particular, showed by their behavior that they were essentially indifferent to the fate of the innovation; they did little either to assist users to develop mastery and commitment, or to stabilize use. A prototypical case is Dun Hollow:

Fig. 36: Indifference as a Route to Low Institutionalization: Dun Hollow (IV-C)


6 low
User commitment
9 low
Stabilization of use
3 high
User frustration
1 low
Assistance
(-)
+
7 low
Stability of program staff
4 low
Teacher/administrator harmony
2 low
Administrative support
+
-
10 low
Percentage of use
(-)
5 high
Administrative ambivalence
(-)
8 low
Building endorsement
11 nil
Institutionalization

+ Influence of other variables not discussed

Though the administrators at Dun Hollow had been perfectly willing to "volunteer" some teachers to field-test the new curricular materials for Eskimo studies, they provided little or no support(2); moreover, assistance from the developer (1) was weak. Frustrated users(3) had little commitment(6) to the materials; this and the poor relations with administrators (4) engendered by weak support lost one teacher to the program (7) and put the participation of the two others in doubt. Use of the program was unstable (9) and limited to a very small percentage of eligible users (10); institutionalization (11) was weakened on both counts. Administrative indifference showed up further as ambivalence (5) about whether the materials deserved curriculum incorporation, which translated to weak building endorsement (8). The net result: a rating of "Nil" for institutionalization.

The story at Proville was, if possible, one of even deeper indifference. The CEP work experience program had been an opportunistic vehicle for the superintendent to bring a protégé into the central office, and to attract additional outside funds. But the protégé was quickly loaded with other tasks, and eventually found greener job pastures elsewhere. His successor struggled anew with the task, but also got competing assignments. So there was no one to counter the resentment and resistance of principals and vocational education teachers who had been pressured to implement a program they found undesirable, and no one to provide assistance that might have bridged the gap. As noted earlier, the program was simply left to rot.

The Burton picture was more constructive, but almost as unavailing. There the central office administrator's de facto indifference was benign; it was masked under the heading of "experimental", "pilot" use of the IPLE legal education materials for possible later curriculum incorporation. Building principals, as per their usual role in Burton on curriculum matters, were uninvolved. Only weak assistance was provided, and the "pick and choose" license given to users meant that the least-demanding IPLE materials were tried out. There was little user commitment, less mastery, and minimal impact on students and the organization. Even if IPLE materials did somehow get written into the curriculum next year, the "pick and choose" norm would still apply.

Summary. We have identified four main scenarios. High institutionalization results from what we called mandated, stable use, where a formal decision is made to use the innovation throughout a district, and needed assistance and support are provided to users to consolidate their implementation. It is also workable, even without mandating, to proceed through what we called the user mastery/commitment route. If central power is not exercised, then everything depends on the degree to which users receive enough assistance and support to develop strong commitment to the innovation and mastery of it, thereby achieving stability.

We found two routes to institutionalization failure. The first we called vulnerability: the course of events which ensues when the innovation's advocates have insufficiently protected the innovation from the depredations of unconvinced principals, from threats of funding loss, or from destabilization through the departure of key figures. The organizational changes needed to buffer the innovation and ensure its future are simply absent. The second way to fail involves administrative indifference, as shown by lack of endorsement, non-supply of assistance, and unwillingness to push hard for later implementation. Administrators, judging from this scenario, need to care enough to provide the requisite conditions for institutionalization. If they do not, no one else will come along to save things.

Institutionalization: an Epilogue

Institutionalization is an outcome of school improvement efforts that can be assessed rather cleanly by what happens later on. As of June, 1980, we assessed the likelihood that each of our 12 innovations had been "built in" enough to insure its continuation. As noted, we believed that durability was likely in about half the cases.

Looking at our June 1980 data, we assembled specific predictions for each site. What would happen the next year, or the year after? Was our understanding of institutionalization adequate to such a task of forecasting? In the spring of 1981, a year later, we reported our predictions back to each of our 12 sites, asking them to tell us whether our guesses were correct. Chart 47 reviews the predictions made, and includes the institutionalization ratings presented earlier in this section. Then it displays the actual course of events in the 12 sites.

We also asked site personnel for their reasons why that course of events had occurred, as well as getting them to check the validity of our reasons. The last column of Chart 47 shows site personnel's explanations of the institutionalization outcome. First we show their spontaneous explanations, in order of priority; then we display their reactions to our explanations, focusing only on those they agreed were of relevance. Whenever their and our explanations coincided, the material is underlined with dashes.*

What can we conclude from Chart 47? First, it is clear that the accuracy of our predictions was moderate to high in all sites; we were never badly off.

Second, we should take a look at the degree to which our explanations coincided with theirs. This occurred for 53 of the 92 causes given (58%). The proportion of agreement did not differ for sites with moderate, moderate to high, or high accuracy, so we must conclude that some causes had differential

---

*It should be noted that the chart does not contain those of our explanations which site personnel dismissed as wholly or partly irrelevant. On the average, about a third of our explanations were treated this way.

Chart 47: Institutionalization: Predictions and Actuality

	Rating of institutionalization	Our prediction re institutionalization for 80,81, 81-82	Site report, as of Spring 1981	Our predictive accuracy	Explanations by Site Personnel*
Plummet (IV-C)	High	Program will continue as durable part of district set-up for 80-81, 81-82	Continued 80-81; operational for 81-82, but may be shut down thereafter, under close board scrutiny.	High/mod	District financial problems; other school closings; lower cost effectiveness of program; Board racism; director has new supervisor; staff and leadership instability; need for program; state funds, stable, impactful program
Tindale (IV-C)	High	Level will remain high; some efforts to modify or reduce program.	Level remains high in spite of staff change only minor program changes.	High	Teacher ownership, central office and principals' support, close supervision by dept. heads, curriculum incorporation; organizational changes not easily reversible; materials availability; student impact.
Astoria (NDN)	High	Will continue as routine though nominal implementation; further program changes likely.	Institutionalized in nominal form; simplifications made in record-keeping.	High	System mandate; preparation for fall use under way May 80; user endorsement of testing aspect; satisfaction with present implementation level; resistance to full implementation (poor fit); low implementation pressure; resignation of advocate.
Masepa (NDN)	High/mod	Will remain at focal school, and for district, in grades 3-7 for 80-81; some modest program changes by individual teachers.	Remained at focal school and in district grades 3-6 (or 3-8) for 80-81. Some program changes by individual teacher.	High	Board mandate 3-7. In service training for untrained teachers. Resistance from some teachers, mandate withdrawn, 2-7th grade teachers discontinued. Central office and board support.
Lido (NDN)	Mod/high	Program will be maintained but scaled down in hours (esp. extracurricular ones); same number of pupils.	Continued at slightly scaled-down level (extra curricular time, some projects)	High	Instructor time; site distance; budgetary control, student demand for courses not increased or decreased; community, board support; built into courses; meets need; disagreement between lead user and principal.
Carson (IV-C)	Mod	Program will continue in approx. present form during 80-81; and for 81-82. Status for 82-83 uncertain.	Program continued 80-81; less emphasis on field trips. Will continue, approximately same form, 81-82. 82-83 less certain, but probably will continue, possible in altered form.	Mod/high	Supt. and principals' stability and endorsement; teacher stability and endorsement (mixed); active new coordinator (helps, causes resentment also); active steering group; parental support. Dissemination funds require program in place. Role ambiguity for new coordinator. Program routinization (manual, etc.)
Banestown (NDN)	Mod	Program will be durably incorporated into 3 elem. schools, 2 middle schools; central office will call for line-item support for lab teachers, and for stab. of program grades 3-7.	In 3 primary schools, middle schools unsure Service extended to 2nd graders. In district budget.	Moderate	Administrative support; teacher commitment; lab teachers freed of other tasks (except in middle school, because of budget cuts; student impact; community support. Need for upper-grade follow-up to DISTAR program.
Calston (NDN)	Low	Continued use is user-dependent; if they stay, program will continue; if they leave, replacements will not cont.	One user using in each of 2 schools; replacements not using.	High	No training time for replacements by peers or outsiders or principal. Previous user coping well. Principals supportive; self-training by previous users.
Perry-Parkdale (NDN)	Low	Transitional year 80-81; program then will phase out.	Transitional year (fewer students & staff). 80-81. Will continue ½-time basis 81-82.	Moderate	Tight funding; loss of external funds, declining enrollments/cutbacks; weak endorsement by central admin; support by other central admin. weak endorsement by principals, counselors, teachers; possibility of dissemination funding; program meets needs; program well implemented and stabilized.
Burton (NDN)	Low	Innovation's topics, activities and materials will be written into soc. studies curric., but program as whole will not be adopted.	Topics, activities, materials written into individual curriculum, and into guides for civics, gov't, history and law--but not as broad district policy for social studies	High/mod	Planned to do this (79-80). Program is poor fit to schedule. Little time free for evaluating program. Current users on curric. revision committee. Freedom for teachers to adopt portions. No rewards for taking more responsibility. Success, user satisfaction
Dun Hollow (IV-C)	Nil	Will not be incorporated into curric.	Not incorporated, though some parts included as supplementary material.	High	Contact with prior curriculum decisions, not written into curriculum. Materials poor, inappropriate, lengthy, time-consuming. Little support from principals.
Proville (IV-C)	Nil	Program will not be continued in any form originally contemplated; will be discontinued.	Program ended. Some staff used ideas in their objectives.	High	Loss of funds; changing priorities, new supt. and board; weak endorsement. No org'nl changes to support; shift to decentralization

*Items marked with underline dashes had been part of our analysis.

BEST COPY AVAILABLE

weighting or importance. A good example is Banestown, where our accuracy was only moderate, mainly because we expected continuation in at least one middle school in addition to elementary-school use. Though we accurately noted budget cuts as a cause of possibly-lowered institutionalization, we did not understand that the ax would differentially fall on middle school programs---even though we, like the site informants, thought the need for the program in those schools would continue.

Or note Perry-Parkdale, where our analysis---largely confirmed by site people---led us to predict a program phase-out. In fact the program hung on by its fingernails; central office support and the hope of future money had more weight than we had thought.

Occasionally, we were surprised, as with the Board's willingness in gung-ho Masepa to back off from its mandate of the ECRI program for grades 3-7 when some teachers complained. But it's consistent with our understanding of Masepa that given this freedom, only two (7th grade) teachers decided to exercise it and not use the program.

On balance, however, we understood our sites well enough to make good predictions. That our causes and those offered by site personnel did not overlap tightly suggests, as we might have expected, that a matter as complex as institutionalization of innovations is multiply caused, perhaps overdetermined. All we need to do is have a good handle on some----perhaps half----of the key causes. That's probably enough for predictive confidence.

Conclusions

We found that about half our sites succeeded in institutionalizing their innovative programs reasonably well, moving them through the "passages" and "cycles" of routinization carefully enough that stable continuation was likely. It was clear that satisfactory current operations and support were not enough: sites with strong institutionalization had made clear organizational changes—mandating the innovation, building it into curriculum, changing working procedures or structures—which were relatively irreversible.

An examination of predictors showed us that good institutionalization requires administrative pressure, accompanied by lack of serious resistance and a reasonable degree of teacher-administrator harmony. Thus we are not speaking of tyrannical operations, but firmly-pursued ones. Strong institutionalization means organizational transformation, as we have just noted, accompanied by a reasonable amount of assistance, enough to bring about stabilized use by a large percentage of users. It also helps if there is personnel stability on the part of both users and administrators.

We found that institutionalization scenarios played themselves out in four different patterns. The strongest (appearing in 4 sites) was that of mandated, stable use, where there was an explicit system-wide commitment for continued use of the innovation, and provision to stabilize that use. Without such a commitment at the system level, we found a second scenario (3 sites) where strong assistance and support combined to develop user mastery and commitment, thence stability and moderate to high institutionalization.

It was also clear that institutionalization could fail, either by vulnerability, (2 sites) where administrators had not done enough to guard the innovation against resistance or environmental turbulence, or by indifference (3 sites) where they simply did not care enough to supply the assistance and protection the innovation needed if it was to survive.

Finally, we found that using our assessment of degree of institutionalization, we were reasonably able to predict the course of events in the site vis-à-vis continuation of the innovation one year later. This held true even though our explanations did not always coincide with those of site personnel.

Student Impact

Introduction/Overview of Findings

So far, we have looked at the innovations' stability in our sites, how widespread their use was, and how firmly built in they were. But these aspects do not necessarily bear directly on another question: what difference did the programs we studied make in the behavior, knowledge and attitudes of their end consumers-----students? No matter how fully and stably implemented an innovation is, it may or may not improve student attitudes and performance. Student performance is usually claimed to be the "bottom line" of school improvement. The fact that such a claim is often rhetorical, and the fact that our conceptual framework examined other important outcomes as well, do not obscure the importance of student impact.

Our assessment of student impact was quite variable across sites. For some sites we had detailed interview and questionnaire responses from users, administrators, counselors, parents, and students themselves, along with "hard" test scores and even a comparison group or two; for others we had little but unsupported—though usually convergent—opinion. There was the additional problem that some programs aimed high, contemplating changes in everything from student achievement to improved self-concept, while others were much more modest, hoping only for reading skills improvement or "environmental awareness." So our picture of what these programs accomplished locally is not a crystal-clear one. By and large, we are dealing with the claims made by the people involved-----as is typically the case when educational innovations are implemented.*

In this section we first review the nature and extent of student impact across the 12 sites, (both direct and meta-level plus side effects), then look at factors predicting that impact. We conclude as before with some typical scenarios leading to high or low student impact.

In brief, we found that student impact was high to moderate in the majority of our sites, was largely positive, and included many "meta-level" or general effects as well as specifically-intended outcomes. Student impact was more likely when users were committed, got helpful assistance, developed strong practice mastery (skill) and stabilized their use of the innovation. It was least likely when commitment and assistance were weak, and when the innovation was "adapted out of shape."

Types and Extent of Student Impact

Chart 48 displays for each site the objectives for the innovative program involved; the direct outcomes,(both positive and negative, seen by stakeholders including users, administrators, counselors, parents, evaluators, and students themselves) and what we called "meta-level" outcomes and side effects. A meta-level outcome was one congruent with the program's purposes, but affecting more-general aspects of students' functioning. For example, the Matteson 4D reading program at Calston caused the direct outcome of improved reading skills, which is a directly-contemplated objective. But the fact that the program contained much provision for student independent work, on a variety of interesting materials, made for a meta-level outcome: more self-direction on the part of students. Side effects were not easily separable from meta-level effects, but usually had more of an unintended flavor. We noted, for example, the alienation of students in the Perry-Parkdale work experience program who enjoyed the program's concreteness and relevance, but thereby came to dislike their regular high school's courses and activities. This example also illustrates the fact that we looked for both positive and negative effects on students.

---

*This is not necessarily a weakness. Strict experimental-control comparisons, though they are seen as desirable by funding agencies, usually do not give clear information on the full range of actual effects (including spinoff effects), and their causes. We should also remind the reader that all the NDN innovations we studied had passed through the validation process operated by the Joint Dissemination Review Panel, which meant that if implemented reasonably faithfully and thoroughly, they would be expected to have predictable and positive student impact.

The chart has our 12 sites ordered by approximate degree of student impact. A rating of "high" was given when it appeared that (a) the program was achieving most of its aims;* (b) it also achieved other positive meta-level and side effects; and (c) these judgments were corroborated, either through repeated responses from one role incumbent, through cross-role verification, or availability of evaluation data. Weaknesses in any of these three criteria lowered the ratings.

A review of Chart 48 suggests several generalizations. First, positive effects dominate-----even for sites where there was considerable user dissatisfaction, even resentment (for example, Proville, Dun Hollow). By and large, when asked about outcomes, site personnel note the good things. It's of some interest that the sites (Perry-Parkdale, Tindale, Masepa) where more negative effects are noted are also ones where much was being attempted: a thoroughgoing work experience program, a comprehensive reading curriculum that ramified into math and science, and a demanding, comprehensive reading program. We shall see shortly that such programs also tended to develop more capacity in users. For now, we note that attempting more may lay the program open to achieving some unintended negative results as well.

---

*The items in the "program objectives" and "direct outcomes" columns are roughly arranged so that objectives can be placed against outcomes by the reader.

Chart 48: Program Objectives, and Student Impact (Direct, Meta-level, and Side Effects)

SITES High impact	Program objectives	Direct outcomes Positive	Direct outcomes Negative	Meta-level outcomes and side effects Positive	Meta-level outcomes and side effects Negative
Perry-Parkdale (NDN)	Basic skills(reading, math, communic)etc). Life skills (crit. thinking, citizenship) Life competencies(credit, health, etc.) Job-finding skills Entry-level work skills; career training Decision-making skill Self-responsibility and initiative Matching interests/abilities to job info Understanding of others Know socio-economic trends; career knowledge Sex role awareness Better parent-child communication	Same or better on basic skills scores U; better math(12th grade girls) E P Specific job skills S C P U Career planning and choice; aids goalless Job exploration attitudes positive E New interests fit jobs, what to look for in job U; identify, explore career options C A Experience with world of work; hands-on C U S Career, occup. knowledge E Prep. for real world of work Exper. wkng with adults; P communicating with them better U	Less exposure to academic courses C	Personal development, identity, U E P Better communic w. adults U S Self confidence U E P S Increased attendance U Responsibility, motivation U C E P Staying in school (lower-level students) C A U Help goalless students A Improved peer relations U Getting permanent job S Parent-child communication P	Some students "get lost" again after a while U Some bide time, don't "deliver" U Program more effective with girls U Alienation from regular school activities C A S Irresponsibility, "can't handle freedom" P U
Plummet(IV-C)	Academic skills (high school equivalency) Social skills Ability to make transition to regular high school Life skills Pre-vocational skills	Academic skills for acad. & GED students U Increased sociability skills U 35% of academic students return to high school or enter GED(equivalency) prog. 37-65% of those entering GED obtain degree. A E 70% of enrolled students complete program(pass GED or return to high school) A Goal orientation for academic & GED students U	30% dropout rate A Academic goals unattainable by Life Skills students	More stability through life skills U Improved attitude to school E	
Tindale(IV-C)	Remediate reading skills Improve attitudes to reading	Reading skills, achievement U AE Better attitudes U A Enjoyment of English U; enthusiasm E		Life skills U Higher attendance U A E Less attrition A Fewer failing grades E Fewer class cuts	Kids segregated U Narrowness: kids think English = worksheets U
Masepa(NDN)	Improvement in full range of lang. arts skills (see at right) More on-task behavior Improved discipline	Increased skills: vocabulary U A E; spelling, U A; phonetics UE, punctuation U, reading comprehension Ux,E reading decoding U, grammar U, written expression U Low achievers more productive UE	Retention levels not good U. Too little diversity Student fatigue U	Concentration, study skills Fewer discipline problems U A More attention to errors U Better academic self-concept U More enjoyment, enthusiasm U A Work with less supervision, more responsible A, U Less time loss, more time on task U A E Rapid students progress faster E	'Some lagging, failing mastery tests U Boredom U
Banestown(NDN)	Reading and math achievement gains	Increased skills reading comprehension U, decoding U, phonics U; math reasoning U, math computation U Achievement gains, reading and math A E		Less disruptive in class U Better work habits U E More on-task behavior U Better academic self-image U, less fear of failure E More expressive, independent U More tolerant, sharing U Greater "willingness to try" A Visible enjoyment E	

Legend for sources of data:	Underlined letters
U= user	
A= administrator	refer to mention by at least 2 persons
C= counselor	
P= parent	x=presence of dissenting or conflicting opinion
E= evaluator	
S= student	

Chart 48: (cont'd) Program Objectives, and Student Impact (Direct, Meta-level and Side Effects)

SITES	Program objectives	Direct outcomes		Meta-level outcomes and side effects	
		Positive	Negative	Positive	Negative
Moderate impact					
Carson (IV-C)	Increased achievement Clearer career interests. Friendliness Improved self-concept as a learner More internal locus of control	Career knowledge U A C Work on new interests U		Achievement composite (use of resources) E Better classroom attitude U Attitude to school EU Self-concept as learner(HS)E Friendliness E Social studies(elem) Self-understanding U	Little effect on achievement U
Calston (NDN)	Basic reading skills, plus: use of reading as tool for learning; literature appreciation; reading for enjoyment.	Increased criterion referenced test scores A U More reading skills Ux		Learning to work independently self-managing U,A Self-motivation A; children like independent work U Children proud to come to school A Children not competing A Reduced discipline problems A	
Lido (NDN)	Awareness of & attitudes to environmental problems Learn cooperative approaches to envir. problem-solving through action	Environmental awareness U Liking for hands-on work U A Will be able to make good enviro. decisions in community as adults U		Reduced discipline problems A Improved self-image U Reduced dropouts U Positive values/attitudes to school U	
Moderate to low impact					
Dun Hollow(IV-C	Eliminate stereotyping of Eskimos Knowledge of Eskimo history, customs, current life Create positive image of Eskimo culture	Some learning of culture, reduction of stereotypes U A New experiences, skills U	Information too detailed U		Some students behind in language arts U
Astoria (NDN)	Prevent failure thru identific. of learning deficiencies in speech, language, audition, motor coord, & socio-emotional development 2/3 of students will be at or above average level	Some skill improvement, esp. fine and gross motor area U		Students less tense during this testing than for others	
Low impact					
Proville (IV-C)	Job-related habits, skills & behavior	Reevaluation of career or college plans U Work skills & habits A		More realistic grasp of work life U L Academic grade increase A Graduating seniors find jobs more easily A	
Burton (NDN)	Knowledge & practical skills re political/government/legal processes(voter education, state govt. indiv. rights)	Concept learning, by being in diff. roles U Exp. active learning approach A	No effects discernable U		

Legend for sources of data:
U= user
A= administrator
C= counselor
P= parent
E= evaluator
S= student

Underlined letters
refer to mention by at least 2 persons

x=presence of dissenting or conflicting opinion

BEST COPY AVAILABLE

Second, the presence of meta-level outcomes and side effects is typical for our sites; only in Dun Hollow and Burton (both sites with sharply limited use, and low stability of use) are there none. Evidently it's unwise to restrict our attention, as many evaluators do, to intended, "concrete," first-level or direct effects of innovative programs. Nearly all of the non-direct effects can be deemed educationally significant, from "improved attitude to school" and "increased attendance" to "more expressive, independent" and "more on-task behavior."

Third, it may be that programs with highly-differentiated objectives, such as those suggested for Masepa, Perry-Parkdale or Carson, are more likely to show high impact, if only because program personnel, evaluators and researchers were more likely to look for results on the whole range of objectives. Sites with more limited hopes, such as Proville, do not inspire such close scrutiny. That question is, of course, allied with the issue of innovation size/scope, "demandingness" and the like.

Finally, we can see that program sponsorship (NDN or IV-C) makes no consistent difference as far as student impact is concerned.

Let's turn to the question of what might have caused differences in amount of student impact.

Factors Causing Student Impact

As in preceding sections, we reviewed the 12 causal networks, working backwards from the "student impact" box, and looking for variables that were directly connected (within 2 steps), or more remotely causal. Chart 49 shows the variables that were directly causal in one or more sites, and discriminated between high and low student-impact sites. To aid clarity, we have also added a couple of key variables (innovation size/scope; innovation change scenario) that do not appear on the causal networks as such.

Chart 49: Antecedents of Student Impact

SITES	PRESSURE	COMMITMENT	DEMANDS/FIT						ASSISTANCE	STABILIZATION	
High impact	Admin. pressure	User commitment	Innovation size/scope	Implementation requirements	Program-sch'l fit	Program transformation	Innovation change scenario	Org. transformation	Assistance	Practice mastery	Stabilization of use
Perry-Parkdale(NDN)		High →	Mod	High --->	Low --->	Mod →	Overreaching		Mod/high →	High →	Mod/high →
Plummet(IV-C)	High --->	High --->	Large	High --->		High --->	Overreaching	High --->	High →	High →	High →
Tindale(IV-C)	High --->	High →	Mod/large	High --->		Low →	Enforcing	High →	High →	High →	
Masepa(NDN)	High --->	High →	Large	High --->	Low --->	Low →	Enforcing		High →	High →	
Banestown(NDN)		High --->	Small/mod	Low --->			Salvaging		High --->	High →	
Moderate impact											
Carson(IV-C)		High --->	Large	High →	Low →	High →	Overreaching	Mod/high →	Mod/low →		Mod →
Calston(NDN)		Mod --->	Small	Low/mod --->	High --->	Mod →	Refitting		Low(admin.) High(self) →	High →	High →
Lido(NDN)		High --->	Small/mod				Refitting		High --->	High --->	High →
Low to moderate impact											
Dun Hollow(IV-C)			Small			Low →	Refitting			High →	
Astoria(NDN)			Large	High →	Low →	High →	(none assigned)				
Low impact											
Proville(IV-C)	High --->	Low --->	Mod		Low --->	High →	Salvaging		Low →		Low →
Burton(NDN)		Low →	Small/mod	Low --->	Low →	High →	Refitting		Low --->	Low --->	Low →

Legend: → Immediate cause
---> Remote cause
(blank)Not a cause, or not on network

Let's walk through the chart from left to right, and see what generalizations can be drawn.

Pressure. For three of our high-impact sites, Plummet, Tindale and Masepa, administrative pressure was a cause of student impact----but a remote one. Perhaps, as we have found earlier, it must be combined with other features, such as assistance, or low latitude, for its effects to be felt. As we have noted earlier, the high pressure in Proville was counterproductive, and the same seems true here.

User commitment. The picture here is clear. User commitment is highly and immediately causal in three of the five high-impact sites, and a remote cause in the other two; is a high or moderate remote cause in the moderate-impact sites; is not causal at all in moderate/low sites, and is low in low-impact sites. So whether users believe in the innovation and want to make it work has a real bearing on eventual student impact. However, we should note that commitment, like pressure, is often a remote cause; we need to look further.

Parenthetically, we should note that building endorsement, another index of commitment, showed no consistent causal relation to student impact----partly, we suspect, because it is a blend of generalized faculty attitudes and administrative support for the innovation, rather than being directly user-related.

Demands/fit. We have already seen in earlier sections that the demands an innovation makes on a school, and the response to these demands, determine what is finally implemented. Let's review the columns in this cluster to see if the same holds true here. It's clear that innovation size/scope and implementation requirements tend to go hand in hand. But the causal relationship to student impact is not a strong one. Though the top 4 impact sites all have moderate to large, demanding innovations, and Burton, the lowest-impact site, has a small to moderate-size project, there are plenty of deviant cases in between: the small/moderate reading lab at Banestown that had high student impact; the more comprehensive, potentially demanding screening/skill development program at Astoria that had relatively low impact. We will have to look further.

Perhaps the issue is program-school fit? No: cases of poor fit appear impartially in high and low-impact sites.

If we remember that issues of size, implementation requirements and fit all precede actual implementation, we can see that the core of the matter may be the sorts of program transformation that occur. What is the program-as-implemented? Here we begin to strike pay dirt, especially if we look at the innovation-change scenarios in the next column as well. It's clear that high student impact is likely when the innovation is large, possibly poorly-fitting, and gets revamped but not substantially downsized(the overreaching" scenario in Perry-Parkdale and Plummet; see also the moderate impact for "overreaching" Carson). It's also clear that high student impact can come when program transformation, possibly with poor fit, is kept to a minimum through enforcement (Tindale, Masepa). And on the low end of the chart, we can see that a poor fit with plenty of accompanying transformation (the "latitude" strategy) guarantees a reductive "refitting" or "salvaging" scenario with little impact (Astoria, Proville, Burton)—especially if assistance is weak.

Assistance. Here the differences fall into the same pattern as for user commitment, but they are somewhat sharper and more immediately causal. Strong assistance is immediately causal in 4 of the 6 high-impact sites, mixed or low for 2 of the 3 moderate sites, not causal for the 2 moderate/lows, and low for the 2 low sites. It's easy to guess that user practice mastery, the main purpose of assistance, cannot be far behind.

Practice mastery. To be sure, this variable plays an immediate causal role: it's high in all 5 high-impact sites, in 2 of 3 moderate ones, and is absent or low in 3 of 4 low-to-moderate impact sites. (The only assistance in Dun Hollow, where mastery was high, the reader may remember, was supplied by teachers for themselves in sheer desperation when none was forthcoming from the developer or their principal.)

Stabilization of use. It also appears that stable use has something causal to do with student impact. It's high and immediately causal for our 2 "overreaching" high-impact sites, seems not causal at all for the "enforcing" sites (a theme to which we'll return shortly), is moderate to high for moderate-impact sites, and non-causal or low for the rest. So perhaps it's not enough for users to be committed and have good mastery of the practice: there needs to be a modicum of stabilization in the system as well.

We should recall, incidentally, that stabilization, in the sense of routinization of *use*, is the issue. Interestingly enough, stability of *personnel* was not at all causal for student impact. Only in Proville did instability of leadership reduce impact, and in no site did instability of staff reduce student impact. This finding makes sense chronologically: when we assessed it, leadership and staff instability (except for Proville) was typically something that was *about* to happen for the coming (1980-81) school year, with unknown influence on student impact.

To summarize briefly: it appears that high student impact is more likely when *user commitment* is high, when *program transformation* is either held to a minimum or is a corrective to an initially over-ambitious start, when strong *assistance* takes place, resulting in practice mastery and stabilization of use. The presence of administrative pressure is a remote cause of student impact----but only, it appears, when because it translates into willingness to restrict program transformation, to supply strong assistance, or to do both.

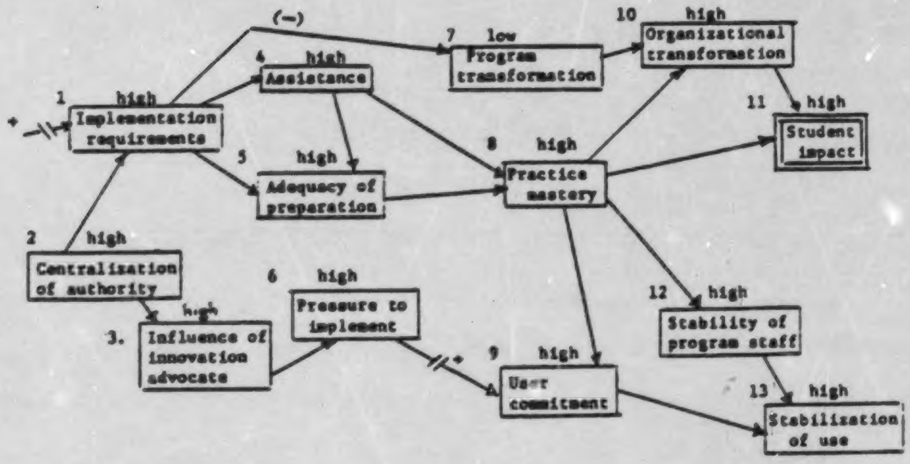
We need now to look at how high, moderate and low student impact scenarios play themselves out in our sites.

Scenarios Leading to High Student Impact

Our high-impact sites clustered into two scenarios: enforced, supported mastery, and stabilized mastery.

Enforced, supported mastery. Once again, Tindale is a textbook exhibit. The network extract looks like this:

Fig. 37: Enforced,Supported Mastery as a Route to High Student Impact: Tindale (IV-C)


(−)
1 high
Implementation requirements
+
2 high
Centralization of authority
3. high
Influence of innovation advocate
4 high
Assistance
5 high
Adequacy of preparation
6 high
Pressure to implement
+
7 low
Program transformation
8 high
Practice mastery
9 high
User commitment
10 high
Organizational transformation
11 high
Student impact
12 high
Stability of program staff
13 high
Stabilization of use

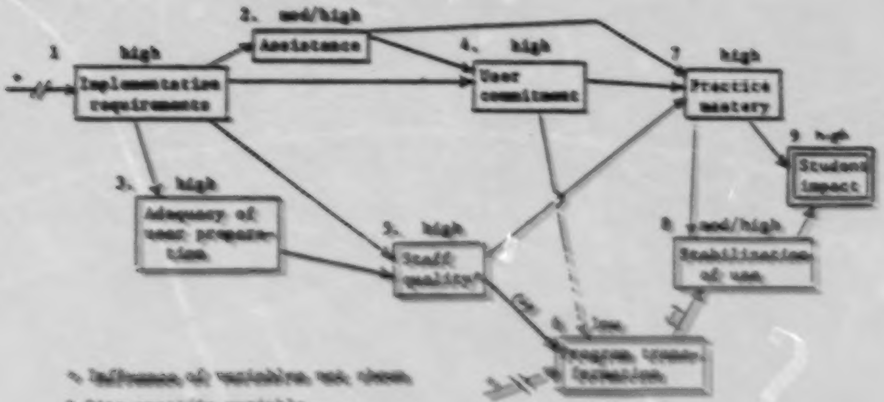
+ Influence of variables not shown

At Tindale, the centralized authority(2) accruing to the innovation's central office advocate(3) enabled the mandating of a very demanding, comprehensive program for reading, math and science for low-achieving students. The "enforcing" mode, with strong pressure to implement(6) led at first to low, then higher user commitment(9). The program's demanding requirements (1) led to careful assistance(4) and good initial user preparation(5), both of which developed strong user practice mastery(8)—another source of increased user commitment. But that alone was not the sole cause of high student impact(11). The enforcing mode meant that program transformation(7) was kept to a minimum; users were closely policed ("changing an activity is a venial sin, but changing an objective is a mortal sin," one teacher noted). The bargain struck in exchange for fidelity was that needed organizational changes (10) in scheduling, pupil rotation and team teaching were carried out, which added to student impact. Note that stability of program staff(12) and stabilization of use(13) were results of skill and commitment, not the converse. This carefully managed process of change essentially worked through the avenues of commitment and mastery.

The story at Masepa was essentially similar. High student impact was achieved through strong user commitment and assistance-developed practice mastery, and program transformation was kept to a minimum, in part because the developer insisted on a faithful replication of the ECRI reading program. The main difference from Tindale was that user commitment came via early success of a pilot experiment, with close teacher-administrator collaboration that generated strong user effort. The mandating of the program did not occur until late in the game, and, incidentally, was itself fed by clear evidence of student impact.

Stabilized, committed mastery. Altogether, six sites (Perry-Parkdale, Banestown, Plummet (all high-impact sites) and Lido, Carson and Calston, moderate-impact sites) went this route. The key variables were practice mastery and stability, accompanied by strong user commitment. Let's look at how these were assured in Perry-Parkdale:

Fig. 38: Stabilized, Committed Mastery as a Route to High Student Impact: Perry-Parkdale(NDN)


1 high
Implementation requirements
2. med/high
Assistance
3. high
Adequacy of user preparation
4. high
User commitment
5. high
Staff quality†
6. low
Program transformation
7 high
Practice mastery
8 med/high
Stabilization of use
9 high
Student impact
*

* Influence of variables not shown
† Site-specific variable

The Experience-Based Career Education program at Perry-Parkdale proved to have heavy implementation requirements(1), which called for ample assistance(2), and also exerted pressure for selection of a high-quality volunteer staff(5), and for careful initial preparation(3) which further buttressed staff skills. The heavy implementation requirements ("Here your neck is on the block. Most people wouldn't want it.") induced, as at Masepa and elsewhere, a good deal of user commitment(4). That heightened user practice mastery(7), already boosted by assistance(2) and by the strong professionalism of the staff(5). Transformation in the program itself(6) stayed low because of user commitment(4) to the spirit of the innovation and staff ability(5), and this contributed considerably to program stabilization(8), already doing well because of practice mastery(7). Student impact(8) was the consequence of such stable, skillful use.

Similar courses of events occurred at Banestown and Plummet. At Banestown, active central office assistance for the Catch-Up remedial lab users boosted user commitment and skill both of which had been threatened by a too-rapid early implementation). Once they were in place, active peer assistance among users developed practice mastery still further, as they revamped the program moderately to achieve stabilization.

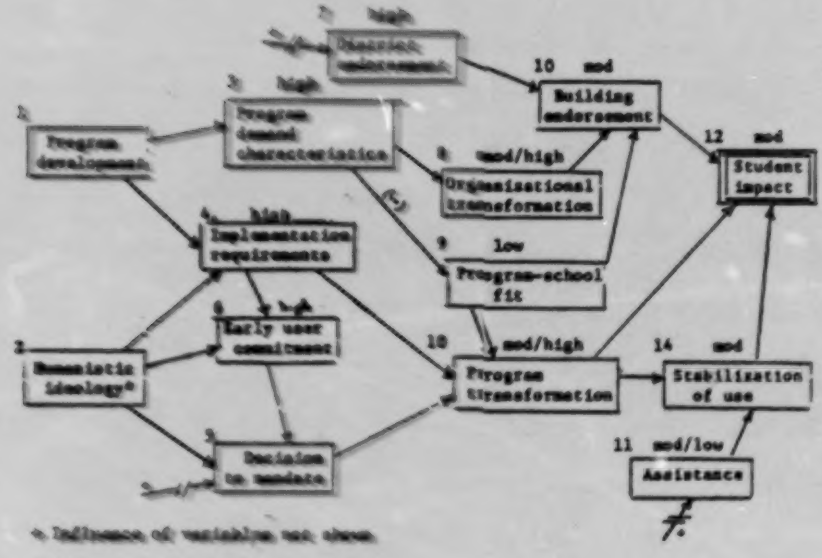
The Plummet picture was, as in Banestown and Perry-Parkdale, one of close cooperation among a committed set of users who were also volunteer staff with high professionalism).

Commitment was also heightened by strong implementation requirements. The "innovation" was a complete school, and the staff members were given much discretionary latitude to develop and redesign it. The resulting practice mastery, developed with peer support in the cauldron of the new alternative school, led to stabilized use and strong student impact.

It is worth noting that these three cases were all somewhat "set off" from their surroundings, operating as subsystems with a life of their own, and developed strong internal loyalties and mutual support. They were "apart together," and used that fact to their advantage----and to that of students.

We should note that the "stabilized, committed mastery" scenario did not always work as well as in these three cases. For an example, here is Carson:

Fig. 39. Stabilized, Committed Mastery as a Route to Moderate Student Impact: Carson (IV-C)


7 high
District endorsement
10 mod
Building endorsement
3 high
Program demand characteristics
1
Program development
12 mod
Student impact
8 mod/high
Organizational transformation
4 high
Implementation requirements
9 low
Program-school fit
6 high
Early user commitment
2
Humanistic ideology*
10 mod/high
Program transformation
14 mod
Stabilization of use
5
Decision to mandate
11 mod/low
Assistance

→ Influence of variables not shown

* Site-specific variable

The development of the individualized education program(1) had special demand characteristics(2), such as activity scheduling and record keeping, and heavy implementation requirements(3) which posed a problem in terms of school fit(9). This led to organizational transformation(8), including the creation of a district-wide steering group. But the fit was still poor enough to reduce building endorsement(12), our best proxy measure of user commitment, since the program was mandated(5) district-wide. The heavy implementation requirements(4) and the humanistic ideology(2) in the district led to strong early user commitment(6), and to the decision to mandate the program. But that decision brought in many new, less-committed users, and the program was considerably simplified ("watered down," some said). That transformation(10), together with sketchy assistance (11) led to only moderate stabilization of use(14), and to moderate student impact(13). The innovation was not one that required a high degree of practice mastery, but only careful, dedicated work with students and parents----so weak building endorsement(12), through weakened dedication, weakened student impact. Generally, we have the same scenario here as in more successful sites, except that the key causes of student impact were moderate.

Looking for a moment at Calston and Lido, our other two moderate-impact sites, the stable-committed mastery scenario is also operative. Both were trying small-scale, less-demanding innovations. At Calston, user commitment was only moderate, even with good front-end assistance that increased initial practice mastery. The Matteson 4D reading program was moderately refashioned to fit the realities of the city's existing comprehensive reading program. This and weak ongoing assistance made for only moderate student impact.

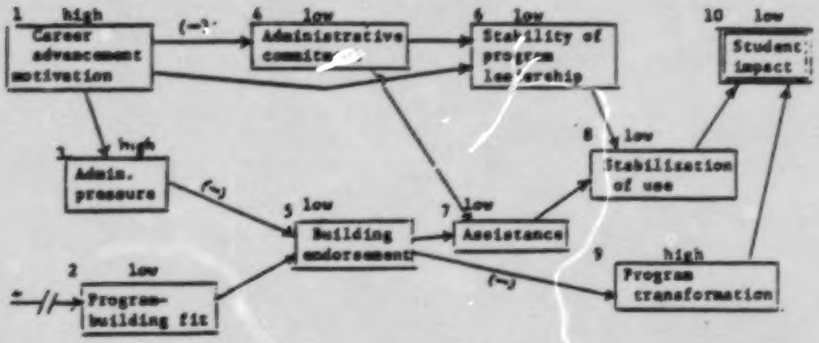
At Lido, good early assistance and community support led to strong user commitment for the KARE environmental education program, and to practice mastery. Use stabilized well, but the reality was that the KARE approaches and materials were such a small part of the larger environmental education program that it was hard to get more than moderate student impact.

Scenarios Leading to Low Student Impact

We found two scenarios here, with two sites each: weak commitment, and program-blunting.

Weak commitment. The clearest exhibit of weak commitment is Proville. The excerpt looked like this:

Fig.40: Weak Commitment as a Route to Low Student Impact: Proville (IV-C)


1 high
Career advancement motivation
(-)
4 low
Administrative commitment
6 low
Stability of program leadership
10 low
Student impact
3 high
Admin. pressure
(-)
5 low
Building endorsement
7 low
Assistance
8 low
Stabilization of use
9 high
Program transformation
2 low
Program-building fit
*
(-)

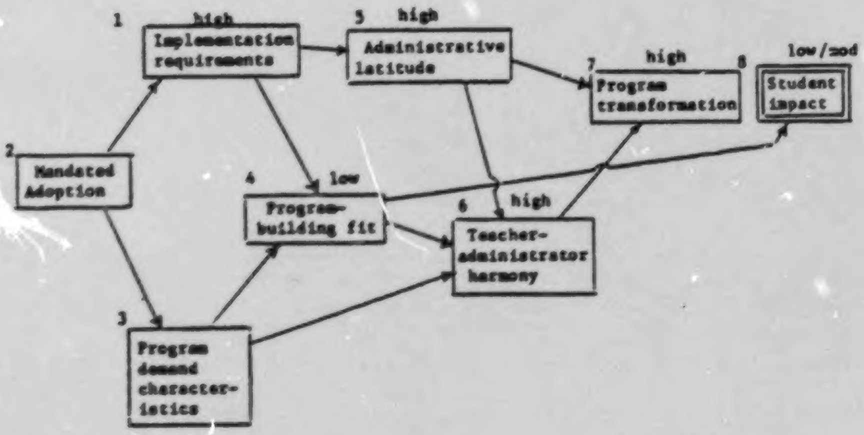
* Influence of variables not shown

At Proville, the work-experience program was mainly a vehicle for career advancement(1); the program's developer rode the innovation into a central office job, and had little continued commitment(4) to it. The program was also a poor fit to the high schools' programs(2). This, along with the superintendent-induced pressure for implementation(3), led to much resentment and low building endorsement(5). In short, neither the program's advocates or its users had any real commitment to it. Weak commitment on both sides led to weak assistance(7), to considerable sabotaging and skeletonizing of the program(9), which along with weak stabilization of use(8)--itself caused by career-driven leadership changes(6)—meant that student impact(10) was essentially nil.

The Dun Hollow story was also marked by low commitment. The superintendent and principals agreed casually to field testing of the new Eskimo studies materials "to stay on the good side" of the intermediate unit that was developing them. But they supplied no support, and users had little commitment to what proved to be a time-consuming exercise with little apparent future in the district.

Program-blunting. We use this label to refer to scenarios (Burton, Astoria) where the main causal thrust came from the latitude users had to transform a poorly-fitting program so substantially that student impact was minimized. Let's look at Astoria:

Fig. 41; Program-blunting as a Route to Low Student Impact: Astoria (NDN)


1
high
Implementation requirements
5
high
Administrative latitude
7
high
Program transformation
8
low/mod
Student impact
2
Mandated Adoption
4
low
Program-building fit
6
high
Teacher-administrator harmony
3
Program demand characteristics

Here the district-wide mandate(2) for use of the early childhood screening and skill development program meant that certain demand characteristics(3), notably the kindergarten emphasis on the requirement for scheduling flexibility, made for a poor program-building fit(4), already potentially poor because of heavy program requirements(1). Teachers had to take time not only for the initial testing, but for daily remedial work with individual students. But, as we have seen earlier, much latitude(5) was granted by the central office advocate. This restored the teacher-administrator harmony(6) that had been threatened by the innovation. Working closely together, the vice-principal and teachers devised a "flexible" implementation plan which farmed out the testing to aides, parents, and the vice-principal herself, and discarded the remedial teaching for many of the skills. In short, program transformation(7) was substantial, so the program could not be expected to have the impact(8) its original developers had expected.

The scenario at Burton was similar, though there was no mandate. The central office advocate considered the IPLE program to be in a "pilot" year, when users could "pick and choose" promising aspects of the program, then, supposedly, build them in to the curriculum. But users quite naturally shied away from the more demanding or adventurous components (e.g., the emphasis on activist-like community experience, and more student-directed learning activities). Yet these very aspects of the program were central to the IPLE program's success, so student impact was minimal.

Conclusions

Though our measurements of student impact were uneven across sites, we found that 5 of our sites had reasonably strong student impact, as measured by inter-role agreement and—when available—by test results on the achievement of program objectives as well as on more general positive "meta-level" and side effects. Another 3 sites showed moderate impact; the remaining 4 sites were moderate or low.

The main factors explaining student impact were *user commitment*, along with strong *assistance* that led to *practice mastery* and *stabilization of use*. The most frequent scenario (6 sites), "stabilized mastery," stressed these factors. Two other sites added the feature of "enforcement," with the extra feature of administrative pressure and restriction of undesirable changes in the innovation. Low-impact sites suffered either from low commitment, or from what we called "program-blunting"--- reducing the thrust of the innovation so far that its effects were trivial.

Essentially, we found that developing committed, stable, skillful use of a good-quality innovation is the critical predictor of student impact. If people learn to use the innovation well and routinely, and feel committed to it, positive results will occur—provided institutional unrest or friction is low. It's of some interest that this picture is considerably simpler than that we have drawn for some of the preceding outcomes (e.g., institutionalization). The message is not, however, a narrow one of "fidelity at all costs." Some considerably revamped innovations worked well----- provided the changes were made in the service of the innovation's chief goals, rather than for organizational or personal convenience. Commitment and competence can drive productive adaptation.

User Capacity Change

Introduction /Overview of Findings

Capacity change was an outcome variable that emerged progressively in the course of data collection, as teachers told us that carrying out the innovation was bringing a host of by-products in its wake. The skills involved in technical mastery of the new practice often appeared to translate into instructional or classroom managerial changes in other subject matters, or in routine tasks. Looking for a blanket term to cover these shifts, we chose "user capacity change" to indicate such a heightening of school-based professional ability.

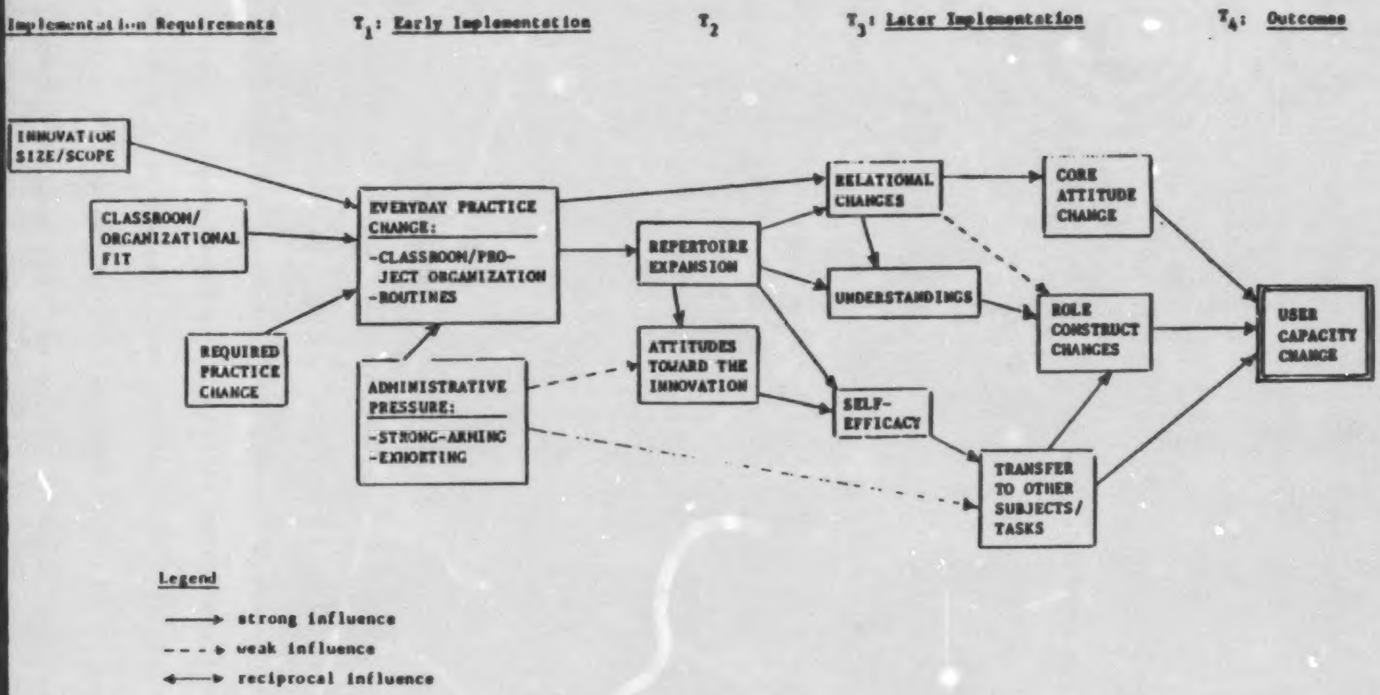
Separating the part of capacity change clearly attributable to the innovation from the part extending beyond the practice was a delicate operation; it was usually a distinction that informants found hard or irrelevant to make. By the same token, it was hard for us to unravel "process changes" from the "outcomes" we are handling in this section. For instance, capacity changes usually came in the form of "enablers": to successfully implement an individualized remedial skills program, teachers had to learn how to work with one or two pupils at a time, while keeping the remainder of the group on task. Learning to do this is a legitimate instance of capacity change; it outlives and extends beyond the innovation, yet is also, more narrowly, a pre-condition for successful implementation of a specific practice. But determining just when such a change occurs - during or near the end of a given year - is usually impossible. The more important point is that, at the majority of sites, there were such changes reported at levels we determined as moderate-to-high. These estimates are higher than those obtained for the survey data, where roughly a third (36%) of the users (N=187) mentioned "benefits" or "rewards" accruing from implementation of the new practice, either in terms of "professional growth," "recognition" or "professional gains." But our interest here is principally at the site level. We want to know not only which changes occurred, but also where such changes occurred, how "high" capacity change sites are different from "low" sites, and why these differences occur. This section will run successively through these topics. In brief, we found that greater capacity change occurs where major practice change is achieved, sometimes through enforcement, and that lower capacity change occurs where there is a "downsizing" of innovations, or ineptness in managing them.

As we proceed, we shall try to weave in several findings from earlier sections, notably from the section reporting on changes in users during implementation. In fact, we can lead off profitably by reproducing the summary flow chart from the "user change" section (p.275) and appending to it our "capacity change" outcome measure (Fig. 42).

As the figure shows, the innovation sets off project-specific changes in instructional and organizational routines, which gradually translate into new understandings, feelings, relationships and transferable skills, the sum of which is a more general increment in professional capacity. Also, some of the important predictors of capacity change appear here: size and scope of the project, local fit, required practice change, and what we have called, perhaps uncharitably, administrative pressure.

The general message of the "user change" section was that greater practice change occurs when more is attempted, i.e., when the innovation makes strong demands on users to change their customary instructional practice in order to implement successfully. These demands result from ambitious (big and/or complex) projects that are poor local fits, forcing

Fig. 42: Causal Flow Chart Tracing User Practice Changes as Antecedents of User Capacity Change


Implementation Requirements
T_1: Early Implementation
T_2
T_3: Later Implementation
T_4: Outcomes
INNOVATION SIZE/SCOPE
CLASSROOM/ ORGANIZATIONAL FIT
REQUIRED PRACTICE CHANGE
EVERYDAY PRACTICE CHANGE:
-CLASSROOM/PROJECT ORGANIZATION
-ROUTINES
ADMINISTRATIVE PRESSURE:
-STRONG-ARMING
-EXHORTING
REPERTOIRE EXPANSION
ATTITUDES TOWARD THE INNOVATION
RELATIONAL CHANGES
UNDERSTANDINGS
SELF-EFFICACY
CORE ATTITUDE CHANGE
ROLE CONSTRUCT CHANGES
TRANSFER TO OTHER SUBJECTS/ TASKS
USER CAPACITY CHANGE
Legend
strong influence
weak influence
reciprocal influence

users to swim in new waters. Users are in turn encouraged, oftentimes prodded, and usually helped by local administrators who are anxious to obtain outcomes that are more than trivial or incremental. As these new skills are mastered, they act both to deliver project-specific outcomes and to generate the kind of second-order outcomes we have labelled "capacity changes." Finally, we noted that many of the higher change-inducing projects addressed a hard-to-change or even hard-to-reach pupil population, which often had the effect of calling forth greater effort and commitment on the part of users. As we said earlier, the more ventured, the more gained. In other words, when users pushed themselves or got pushed beyond their customary instructional practices, they stretched their minds and their repertoires. The policy question here is how practice-stretching can be facilitated and sustained below tolerable thresholds of pain and uncertainty. Some of the answers are provided in the section on assistance, pp. 137-176.

Types and Degrees of Capacity Change

Essentially, the cross-site portrait has already been painted in the user change section. Table 14(p.252) reported on the types and items of practice change, and Table 16 (p.268) showed a rough Guttmann-like scaling of the 12 sites according to pervasiveness or extent of practice change. When we moved out to the end of the experience and asked users to think in particular about second-order effects of implementation — ones that had affected other parts of their instructional practice — then re-scaled the 12 sites, the results were similar. We came up with a rough ordinal scale moving from "low" capacity change to "high" capacity change. The types of capacity change fell into the categories we generated for Table 14 in the user change section: changes in daily routines, in general instructional repertoire, in relationships, in understandings and feelings, in other segments of one's work and in basic constructs and attitudes. But there were some shifts in emphasis and some new instances. Let us do a brief census of the instances of capacity-change, keying them to the sites and to the different "scenarios" we evolved (see pp.239ff.) in trying to account for the later history of changes in the innovation.

Chart 50, the result, contains some useful information. Above all, it fleshes out precisely what "user capacity change" is made up of. Reading down the chart also brings home the point that innovations, whatever their objectives for pupils, can be vehicles for some farther-reaching professional and instructional changes on the part of teachers. All these items can be seen as a sort of value-added increment over and above improved pupil performances or attitudes: the chart shows, too, how diverse such increments can be.* In part, this finding should not surprise us. Recall that when we assessed users' motives for adopting the innovation (see Table 3, p.64, and discussion, p.67), the incentives for professional growth outnumbered those of attaining desired pupil outcomes. In short, innovations were in part perceived as opportunities for capacity-enlargement. Looking at Chart 50, it appears that there was, in fact, a substantial payoff for users at 7 of the 12 sites and at least some user-centered rewards at 9.

How do the relative rankings of the twelve sites jibe with the estimates made in the "user change" section, notably on Table 16 and Chart 34 (p.269)? Fairly well. Banestown, Tindale, Perry-Parkdale, Lido and Astoria are at a slightly higher notch on the user capacity scale,

---

* Note that Chart 50 is cast in positive terms. Though we saw in Chapter V that there were a few sites with negative implementation experiences, notably Dun Hollow and Proville, there was little evidence of durable capacity decreases. We did encounter instances of increased wariness toward innovation, and/or cycnicism about improvement efforts, but they were rare.

Chart 50 Instances of Capacity Change, by Sites

Capacity-change rating/Sites	Instances mentioned by informants*	Innovation-change scenario**
High capacity change		
Masepa (NDN)	Better understanding of learning process Better fix on actual achievement levels Better organized ("it's shaped me up.") Better rapport with pupils Understanding, application elsewhere of mastery learning principles, techniques	Enforcing
Plummet (IV-C)	Stronger commitment to "alternative" systems. Better rapport with students and staff. Better understanding of students and of student-tailored curricula. Sense of increased "professionalism" More knowledgeable about changing individuals and institutions.	Overreaching
Banestown (NDN)	More capable in individualizing instructional treatments. More knowledgeable about tests and testing. Transfer to other tasks (at other 1/2 time post). Better mastery of school curriculum. Better understanding of emotional problems of pupils and their effects on performance. Better at teamwork. More resourceful, i.e., more instructional materials at hand or in one's repertoire. Crystallizing, helping to orient career plans.	Salvaging
Tindale (IV-C)	Better organized. More information-sharing with colleagues. Greater interest in low-ability pupils. Increased skills in reading-related instructions. Transfer of remedial approach to other parts of one's practice.	Enforcing
PerryParkdale (NDN)	Better at collaboration with colleagues. Expanded, more-realistic view of teaching lower-achieving students ("be tough... some kids are unreachable."). Improved managerial skills. Crystallizing, orienting career plans. "Cosmopolitanization" (meeting people, observing practices outside the district).	Overreaching
Moderate capacity change		
Carson (IV-C)	Closer rapport with pupils. More knowledgeable about pupils' home life. Increased understanding of pupils ("You see them in a totally new light"). "Better in the classroom." More institutionally savvy.	Overreaching
Lido (NDN)	Increased hands-on teaching capacity. Increased interdisciplinary skills. Better able to interact with other environmentalists in other schools. More expert in town council.	Locally refitting
Low-moderate capacity change		
Calston (NDN)	Closer rapport with pupils. Providing a wider range of instructional activities. Better planning, organizational skills.	Locally refitting
Astoria (NDN)	Better testing procedures; better understanding of specific areas of weakness Revisions in lesson plans for other su[illegible] matters.	(Not catalogued-closest script is "Locally refitting"
Low-nil capacity changes		
Burton (NDN)	Larger stock of resource materials.	Locally refitting
Dun Hollow (IV-C)	Possibly less stereotyping of minority group	Locally refitting
Proville (IV-C	None reported or observed for teachers.	Salvaging

*Mentioned by more than one informant at sites with more than 3 informants; mentioned by one informant, with no contradictory evidence from others, at sites with 2 or fewer users.

**See section on "changes in the innovation," especially pp. 239ff.

underlined items: not mentioned in user change section, Chart 14.

but rank orders have not changed substantially. How to account for these shifts? First, they result from a greater number of second-order outcomes being reported when users were asked or probed specifically about this topic—something we did far less of during our assessment of user change during implementation. Either these changes came later, or users were more loquacious about them.

Also, there are some new items, the ones highlighted with broken underlines. They sound two themes: a career-crystallizing theme and a "cosmopolitanizing" theme. First, working through the innovation helped users to better channel their future energies by showing them how they coped in previously unknown roles. For instance, a teacher at Perry-Parkdale moved into a modified counseling role in the career education program, enjoyed it, then left the program to do full-time pupil counseling. At Banestown, the main lab teacher acquired specialized skills which she then pursued further in a degree program, and attempted to get a supervisory assignment. The second theme, cosmopolitanizing, turns around contacts made outside the local school district. Users at Perry-Parkdale met people and observed practices elsewhere in the state in the course of disseminating the career education project. The chief user of the environmental educational project at Lido became a local expert. These items helped boost the user capacity change ratings and rankings at those two sites over the estimates made of practice change during implementation.

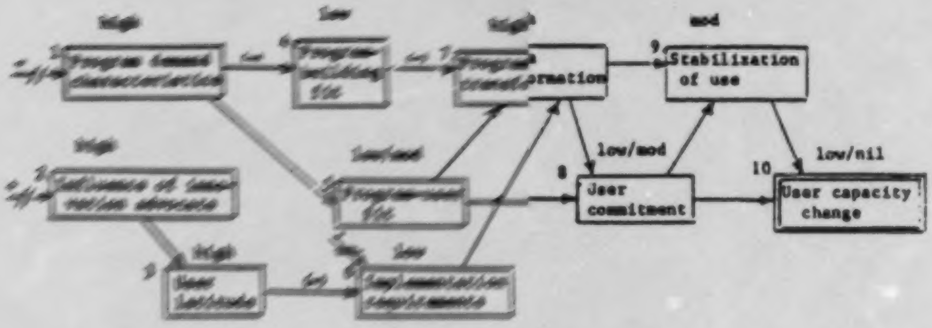
Finally, while we are at the descriptive level, a scan of the final column is instructive. To recall our several scenarios of changes made in the innovation (pp. 239ff.), higher capacity-change sites are primarily those with an "enforcing" and "overreaching" script, whereas lower-change sites are mostly "locally refitted." This makes good sense. Enforcement scenarios involved ambitious classroom-level changes which administrators sustained through a mixture of close monitoring and assistance. Overreachers did precisely that. Although they fell short of their goals, they still went full-bore for at least several months beyond their and the school's conventional practices, and, in so doing, appeared to enlarge local capacities. By contrast, local refitters were mostly sites where an initially ambitious project was whittled down to a far more modest, less user- and school-discrepant version which effectively reduced the possibility of second-order outcomes like the capacity changes we are after in this section. For somewhat different reasons, Calston, Astoria, Burton and Sun Hollow are low-enforcing, underreaching sites, and their teacher-centered outcomes are correspondingly meager.

Scenarios Leading to Low Capacity Change

Moving beyond descriptive analysis, we naturally want to know what else distinguishes low capacity-change from high capacity-change sites. In other words, how can we predict degrees of user capacity change, and what do such predictions tell us about ways of increasing the impact? In part, Figure 42 at the start of this section supplies some of the answers. But we suspect that such a general model undercomplicates the real-life phenomena at our field sites. There are probably several paths to both low and high user capacity change. To find them, we need to analyze the twelve causal networks. Our low-changing sites have two basic profiles, a "downsizing" or "midgetizing" profile and a "fouling up" profile. Let's look at them in turn.

Downsizing. Figure 43 shows part of the causal network for Burton, with a "downsizing" scenario. Most of the boxes, ratings and streams are virtually identical to those at Astoria and—taking into account higher ratings - close to those of the Calston network.

Figure 43 Downsizing as a Route to Low Capacity Change: Burton (NDN)

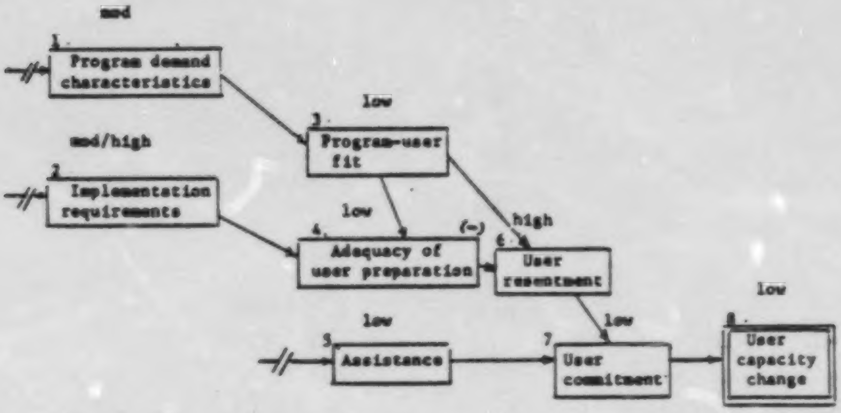

high
Program demand characteristics
low
Program-building fit
high
Program transformation
mod
9
Stabilization of use
high
Influence of innovation advocate
low/mod
Program-user fit
low/mod
8
User commitment
low/nil
10
User capacity change
high
User latitude
low
Implementation requirements

* Influence of other variables not discussed.

The display tells a relatively simple story. The project, if implemented faithfully, was demanding(box 1) and would call for substantial changes that fit poorly at the building level(4) and with teachers' usual repertoires(5). The innovation advocate(2), a central office administrator, wanted to get the project adopted, so he gave teachers discretionary latitude (3) to use as much of it as they liked, which in turn lowered the stringency of the implementation requirements. All the arrows then point to the "program transformation" box(7); the innovation was downsized to far more modest proportions - most teachers used only snippets of it - which heightened a generally low commitment to the practice(8) on the part of users. The project got moderately stabilized(9) in the course of the year, but its impact on users(10) was virtually nil.

Fouling up. There is another way to get low user capacity change, to which we gave the unlovely label of "fouling up." The two prime cases, Dun Hollow and Proville, have similar networks; here is an excerpt from Dun Hollow's.

Fig. 44: Fouling up as a Route to Low Capacity Change:
Dun Hollow (IV-C


mod
1. Program demand characteristics
low
3. Program-user fit
mod/high
2. Implementation requirements
low
(-)
high
4. Adequacy of user preparation
6. User resentment
low
low
low
5. Assistance
7. User commitment
8. User capacity change

+Influence of other variables not discussed
* Site-specific variable

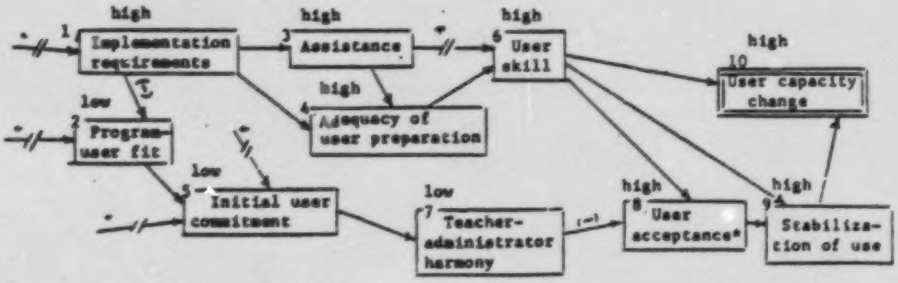
This is a still shorter story: A poorly-designed and moderately-demanding project (1) resulted in a poor program-user fit(3). Initial preparation(4) in the face of substantial implementation requirements(2) and ongoing assistance(5) were poor, further increasing user resentment(6) and further depressing user commitment to the project(7). Gradually, the project withered away after some futile attempts at recasting it. User capacity change(8) was thereby slight. The key here seems to be the lack of both front-end and ongoing support. Such support might have enabled adaptive improvement in what was essentially a poor-quality innovation. Also, looking back at the Burton network, "user commitment" is beginning to loom large as a predictor of capacity change.

Scenarios Leading to High Capacity Change

Now to contrast these two profiles with those of the five high capacity-change sites. We found 2 scenarios, one common to all 5 sites, and another sub-scenario characterizing only Masepa and Tindale. We also unearthed a sub-theme affecting levels of user capacity change at Perry-Parkdale and at a "moderate" change site, Lido.

Achieving major practice change. The common scenario here furnishes a nice contrast with the "low" change sites and, in so doing, strengthens its explanatory power. Here is the causal flow, using Tindale data.

Figure 45 Achieving Major Practice Change as a Route to High Capacity Change: Tindale (IV-C)


high
1 Implementation requirements
high
3 Assistance
high
6 User skill
high
10 User capacity change
low
2 Program-user fit
high
4 Adequacy of user preparation
low
5 Initial user commitment
low
7 Teacher-administrator harmony
(−)
high
8 User acceptance*
high
9 Stabilization of use

+ Influence of other variables not discussed

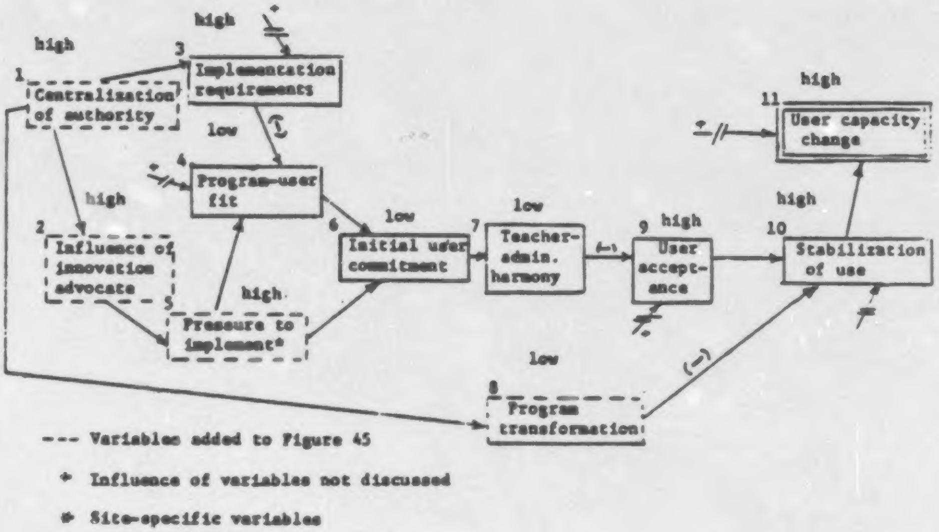
* Site-specific variable

The upper stream shows how "fouling up" can be avoided. The project was demanding (box 1), but local administrators delivered adequate assistance (3) both to increase initial levels of user preparation (4) and later levels of user skill (6) which then led to stabilized use(9) and to user capacity change (10) as a result of the successful implementation of the demanding new practice. Elsewhere (e.g., Banestown, Masepa, Plummet), initial user preparation was poor, but later assistance from within and outside the school assured practice mastery.

The lower stream of Figure 45 has a little more drama. The bulk of users—as contrasted with the "pioneers" who developed the innovation—didn't like the project(5), in part owing to its poor fit(2) with their customary practices and operating philosophies. This led to friction between users and administrators(7). Gradually, however, users got better at doing the program(6) and came to appreciate its merits, so acceptance(8) grew. The practice settled down(9), preserving the initial change gradients. Elsewhere (ex: Plummet, Perry-Parkdale, Banestown), initial levels of commitment were higher, and led equally to the "stabilization" and "capacity change" boxes. It looks as if the royal road to coping successfully with demanding, ill-fitting projects has to include ongoing assistance and at least minimal acceptance on the part of users.

Enforcing. The second sub-scenario for high-capacity change sites is also a mirror image of most of the "low" sites. In contrast to liberally "downsizing" the projects, the story at Masepa and Tindale is that of enforcing major practice changes. Let us go back to the bottom stream of the Tindale network, adding to it these "enforcement" variables.

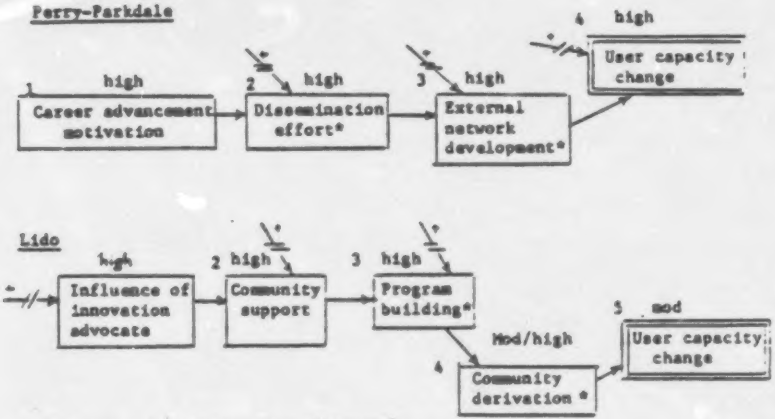
Figure 46: Enforcement of Major Practice Change as a Route to Capacity Change: Tindale (IV-C)


high
high
1
Centralization of authority
3
Implementation requirements
low
high
11
User capacity change
4
Program-user fit
high
2
Influence of innovation advocate
5
Pressure to implement*
high
low
6
Initial user commitment
low
7
Teacher-admin. harmony
(–)
9
high
User acceptance
high
10
Stabilization of use
low
(–)
8
Program transformation
--- Variables added to Figure 45
* Influence of variables not discussed
* Site-specific variables

The message here is that centralization of authority (box 1), along with the accompanying power and drive of the central office administration, acted to keep the change gradient high by making sure the project was not downsized or otherwise transformed (8), while at the same time providing the assistance (see Figure 45) that contributed to stabilization of use (10). That high change gradient, stabilized, left users with a new set of skills and constructs. It is likely that, left to their own devices, users would have implemented less, with correspondingly fewer capacity gains. As uncomfortable as we may feel about the enforced maintenance of major practice change, it appears under certain conditions to be a good vehicle for getting the kinds of teacher capacity change we displayed in Chart 50 above.

Cosmopolitanizing. We mentioned earlier a final leit-motif, a sub-theme in the prediction of user capacity change. This one is shown on Chart 50 in the underlined items for Perry-Parkdale and Lido. The innovations brought users into wider contact with people and practices outside the local school system, from which users learned and extended their own capacities. These contacts also, incidentally, opened doors to future career shifts. Here is the causal stream for both Perry-Parkdale and Lido:

Figure 47: Cosmopolitanization Theme: Perry-Parkdale(NDN) and Lido (NDN)


Perry-Parkdale
1 high
Career advancement motivation
2 high
Dissemination effort*
3 high
External network development*
4 high
User capacity change
Lido
high
Influence of innovation advocate
2 high
Community support
3 high
Program building*
Mod/high
4
Community derivation *
5 mod
User capacity change

* Influence of variables not discussed.
♦ Site-specific variable

The excerpts are fairly self-explanatory. Dissemination effort(2) brought users at Perry-Parkdale into wider contacts(3), and the effort itself entailed the development of new skills(4) (of presenting the practice, marshalling evidence in its favor, preparing new users, etc.). Similarly, the innovation advocate at Lido(1), with community support(2), extended the environmental science project into the community(3, 4) where he became a local expert and, via that expertise, also developed dissemination and problem-solving skills(5) in a new context.

Conclusions

Let us try to tie these different strands together. At seven of the twelve field sites, we found moderate to high levels of user capacity change in the form of new skills, constructs and attitudes derived from the innovation and applicable beyond it. When the 12 sites are scaled by degree of capacity change, the profiles are similar to those obtained for practice changes during implementation, although some new themes appear (ex: career crystallization, cosmopolitanization). In addition, the profiles bear a relation to the four scenarios described in the section on changes in the innovation. High capacity-change sites were more likely to be "overreachers" or "enforcers"; low capacity change sites tended to be "local refitters."

Low capacity-change sites typically turned out that way as a result of making sizeable changes in the project, of delivering inadequate assistance and of failing to ensure user commitment. High-change sites maintained ambitious changes by providing assistance and by gaining at least local acceptance of the project. In two high-change cases, close administrative monitoring had the effect of preserving initially high levels of practice change and, thereby, of producing capacity growth on the part of implementing staff.

A final ingredient is enhanced capacity achieved when project staff disseminate the new practice outside the local school system.

Job Mobility

Introduction /Overview of Findings

As we saw in the analysis of our informants' motives and attitudes (pp. 61 ff.), about 40% of users and 50% of the administrators had career plans tied in with the adoption of the innovation. Administrators, in particular, had designed personal trajectories that turned around solidifying a recent promotion or getting ready for a new one. We also noted that in some cases (ex: Proville), administrators rode the project to a job elsewhere and in so doing, destabilized it, sometimes mortally. But when career motives were absent (ex: Dun Hollow), the project often lacked the requisite energy to get it through difficult moments and to assure its future.

Looking out the back end, we naturally wanted to know whether and when people got where they wanted. How much job mobility occurred? And was it related to the innovation, or adventitious? Were there sites with similar events occurring between an initial career advancement motive and an ultimate move to another job? Did these things not happen at places where people didn't get the career shifts they were seeking?

In brief, we did find a moderate amount of innovation-related job mobility, about a third of it upward; more of it took place in IV-C than in NDN sites. There were several different mobility scenarios involving blends of success-driven job changes, opportunism, and external contingencies, such as fiscal crises.

Timing and Extent of Job Mobility

Our first task is a descriptive one. Looking across the twelve field sites, we need to find out how many key actors made innovation-linked job shifts, *when* these shifts occurred, *where* people were coming from and going to and, finally, how *job mobility profiles varied* by site and by program (NDN vs. IV-C).

We have tried to pack all that information into a single summary chart. Chart 51 arrays the projects by *program type*, then shows for each project the *number of key actors involved*, *job mobility shifts at three moments in the life of the project* (its creation, during or at the end of the first year of implementation, beyond the initial year), *whether these shifts were innovation-related* and, in the final column, a *site-level estimate* of job mobility. Note that the cell entries tell us where users and administrators were coming from and going to, much as we tracked individuals' contemplated trajectories in the section on user and administrator motives for adoption.

Our first observation is that there is a moderate amount of moving around related to the innovation (63 moves for our 12 sites, of which 83% are clearly innovation-related). Activity is high at the *outset*, when the project creates new, often upwardly mobile roles. This is when a fair number of teachers move into project-related administrative slots. Activity is also high during *later* implementation, when administrators move out and up or simply up within the district, and teachers associated with the project take their places. How many people actually move up? If we take the full number of innovation-related job shifts (63), 12 entailed teacher promotions to administrative slots* and 10 involved administrators moving higher. That amounts to 35% of the innovation-related job shifts.

While we're counting noses, there seems to be more innovation-related job mobility in the five IV-C sites (37 moves or positioning for

---

*Included here are promotions of high school teachers to department chairs.

Chart 51: Job Mobility at Sites, by Time Period

SITES	No. key actors involved+	T1-Creation/initiation of project	Innovation-related?	T$_2$-Early implementation (1st year)	Innovation related?	T$_3$ - Later implementation	Innovation-related?	Overall mobility rating for site *
Astoria (NDN)	5	1 cent.office(C.O) admin.strengthens new role	⋰	1 bldg. admin. moves up 1 C.O. admin. moves out and over	⋰ ⋰	N/A	N/A	Moderate
Banestown(NDN)	6	1 aide moves in & up to teacher status 1 teacher moves back in 1 teacher prepares for move up 1 C.O. admin. positioned for move up	✓ ✓ ✓ ✓			1 tchr. moved back down 1 tchr moved over to desirable post	0 0	High
Burton(NDN	9	1 C.O. admin. strengthens role	⋰			N/A	N/A	Nil
Calston(NDN)	[illegible]	1 tchr prepares for move up 1 C.O. admin. extends authority 1 bldg. admin strengthens position	✓ ✓ ⋰			1 C.O. admin. moved out and down 1 tchr(librarian moves out and over 1 tchr in process of moving out	0 ⋰ ⋰	Moderate
Lido(NDN)	5					1 bldg. admin. moves out and up	⋰	Low
Masepa(NDN)	13			1 tchr moves up to supervisory role	✓	1 tchr moves up to supervisory role 1 C.O. admin.retires 1 proj.admin.moves out	✓ 0 0	Low/moderate
Perry-Parkdale (NDN)	10	3 tchrs move in from less desirable jobs 1 tchr. moves in and up to admin. post	✓ ✓	1 C.O. admin. moves out & (tries to go) up	✓	1 tchr moves out & over 1 tchr moves out & back down 1 proj. admin. moves out and up 2 bldg. admins. move out, 1 moves up	✓ 0 ✓ 0	High
Carson (IV-C)	27	2-3 tchrs move out 2-3 tchrs move in 1 bldg. admin. strengthens role	✓ ✓ ✓	1 teacher moves out 1 bldg. admin. moves out	0 0	1 tchr(prog. coord.) moves out 1 bldg. admin. moves out and over 1 bldg. admin. moves up 1 tchr moves in & up to prog. coord. role then moves out & up	0 ⋰ 0 ✓	Moderate
Dun Hollow(IV-C)	7	1 regional admin. extends role	✓			N/A	N/A	Nil
Plummet (IV-C)	6	1 tchr moves in and up to admin. role 5 tchrs move in	✓ ✓	4 tchrs move up to supervisory role	✓	1 bldg. admin. moves out 1 tchr moves out	✓ ✓	Moderate/high
Proville(IV-C)	14	1 tchr moves in and up to admin. post	✓	1 C.O. admin moves up 1 tchr moves in and up to admin. post	✓ ✓	1 C.O. admin. moves out and up 1 tchr moves in and up to proj. admin. role	✓ ✓	High
Tindale(IV-C)	14			1 tchr moves up to bldg. admin. post	✓	1 bldg.admin.retires 1 C.O. admin. moves out and up 3 bldg. admins. move up	0 ✓ ✓	High

+People in key roles connected to the project for whom job mobility was possible

*Researcher estimate based on proportion of actual job moves to total of key actors, with higher weighting for moves by people immediately responsible for, or crucial to, the innovation (ex: project director).

Legend:

✓ Yes, clearly
⋰ possibly, in part
0 no

N/A = not applicable

BEST COPY AVAILABLE

imminent moves) than in the 7 NDN sites (29). The final column confirms this trend. Dun Hollow excepted, all IV-C sites have moderate to high moving around, whereas NDN sites are more diverse. The most likely cause lies in the genesis and scale of the projects. IV-C innovations are generated locally and appear almost invariably to create new coordination and supervisory roles. Also, three of the five are large-scale projects. By contrast, most NDN projects are add-ons or drop-ins to existing organizational arrangements — Perry-Parkdale being an obvious exception - and, in four of the seven cases, modest ventures overall.

Note that some job mobility (14 moves, or 18% of total) is not related to the innovation. Such mobility was of two types: (1) project staff were planning to leave or retire, or were moved elsewhere independently of the project; (2) environmental turbulence, usually in the form of sudden budget cuts, ejected people from the project, usually into unwanted jobs. More on this latter type in a moment.

Low-Mobility Sites

At four of the twelve sites, we found little or no evidence of innovation-related job mobility: Burton (NDN), Lido (NDN), Dun Hollow(IV-C) and, at a somewhat more active level, Masepa(NDN). Looking over the data, our best explanation has three parts. First, in all cases - with the possible exception of a building principal at Lido - neither users nor administrators were trying to change jobs at the time of adoption. Secondly, these were relatively tranquil places. There was little environmental turmoil; no fiscal crisis to "RIF"* people out of innovation-related jobs, no major turnover in project staff and leadership

---

* Reduction in Force.

(although, here again, Lido lost a key innovation advocate). Thirdly, in 3 of the 4 cases - the exception being Masepa - the innovation itself was of modest proportions. The smallness of scale meant that no new supervisory, assistance-giving, or dissemination positions were created for people to move into, or use to prepare a move elsewhere. Modest scope also meant that practice change was limited, which in turn gave users and administrators few opportunities to revise their existing roles or construct new ones.

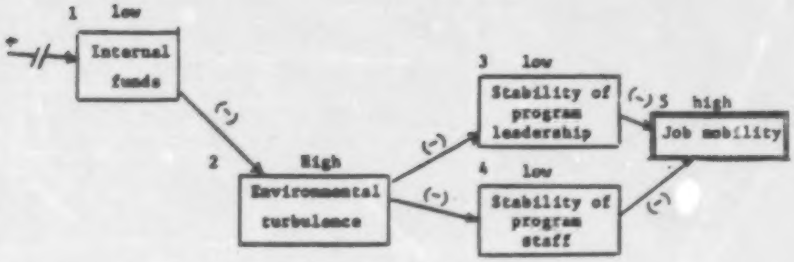
Sites where Mobility Occurred

In the eight remaining cases, career moves were clearly tangled up in the fate of the innovation locally. At the grossest level of analysis, we have four families. (a) *Casualty cases*: sites where job mobility was unwanted and came as the result of environmental turbulence. Both Banestown and Calston are examples. (b) *Raw opportunism*: cases in which career motives prevailed from the start and got satisfied. Proville is the clearest-cut instance. (c) *Success-driven advancement*: cases where the innovation was mandated (Astoria, Carson and Tindale). (d) *Win-lose* scenarios: cases in which career shifts resulted from *both* user-perceived success and job instability (Perry-Parkdale and Plummet). Let us run briefly through these four scripts.

Casualty cases. Innovations at both Banestown and Calston were hobbled by budget crises. Both projects had been doing well. Users had worked their way, with some pain, to smoother program execution.

There was evidence of improved pupil performance. Banestown administrators had been gearing up for district-wide use the following year. Here is the later causal flow for Calston:

Figure 48: Job Mobility as Casualty: Calston(NDN)


*
1 low
Internal funds
(-)
2 High
Environmental turbulence
(-)
(-)
3 low
Stability of program leadership
4 low
Stability of program staff
(-)
(-)
5 high
Job mobility

* Influence of variables not discussed.

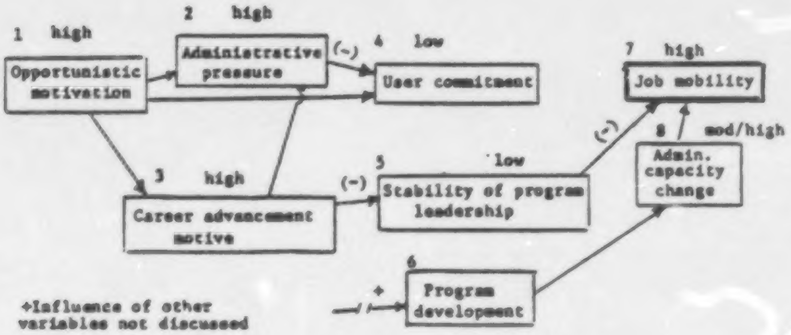
The district had to make drastic budget cuts(1), which were made first in the newer or experimental programs. In the ensuing turbulence(2), staff were reassigned(4). Calston lost all but one of the original users, along with its chief innovation advocate(3), the curriculum coordinator.

The Banestown network is identical, except that the "internal funds" box follows from "environmental turbulence."

In both cases, however, it is worth noting that the level of implementation - the numbers of staff and pupils engaged in the project - dropped only slightly during the following year. And - an interesting wrinkle - for some actors, career plans were not compromised. One Banestown user who was reassigned got her own classroom far sooner than she had counted on. Central office staff kept their own and their protégés platforms intact for later administrative leaps. Only one actor was frozen in a full-time slot she did not want. So forced mobility is not always a disaster for career progression.

Raw opportunism. Proville has the dubious distinction of being alone in this category. At other sites, career motifs were equally strong, but they usually translated into strong and relatively long commitment to the project's success. At Proville, however, one of the innovation advocates rapidly rode the project into the central office, then promoted a friend, who then moved on to a state-level administrative slot. These advancements seemed to be part of a local tradition of coopting protégés into an "old boys' network" via the creation of administrative posts through soft-money grants. The causal network excerpt looks like this:

Fig. 49: Job Mobility as Opportunism: Proville (IV-C)


1 high
Opportunistic motivation
2 high
Administrative pressure
(-)
4 low
User commitment
7 high
Job mobility
3 high
Career advancement motive
(-)
5 low
Stability of program leadership
(-)
8 mod/high
Admin. capacity change
6
Program development
+
+Influence of other variables not discussed

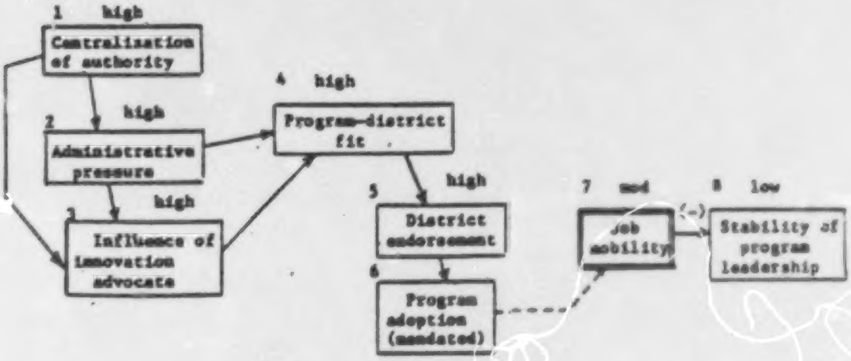
Local principals and teachers saw the central office as cynically opportunistic(1), and reacted negatively(4) to the proposed project, which was forced(2) upon local high schools. Then, the chief project administrator jumped ship at the end of the initial year (5, 7), bringing on a protégé who rapidly did the same. The paradox was that the project design was probably a good one, meeting a local need and stretching the high schools' capacity. But initial local resistance, together with indifferent leadership, first slowed, then gradually eroded it.

Note finally the arrow leading to job mobility(7) from administrative capacity change(8) and program development(6). The script here is more socially redeeming. In the course of program development, administrators tried out, then exercised administrative skills that they then could take elsewhere, presumably to apply to other program development efforts. We found this phenomenon elsewhere as well (see below).

Success-driven advancement. These 3 projects are probably the most appealing. They succeed, their users and administrators get promoted and, from all available evidence, career advancement motives are muted, if not absent, at the outset. Good works pay off. Except that it is not quite so simple.

The peculiar instance here is Astoria, a maverick site in several of our analyses. The causal flow was as follows:

Figure 50: Job Mobility as Success-Driven Advancement: Astoria(NDN)

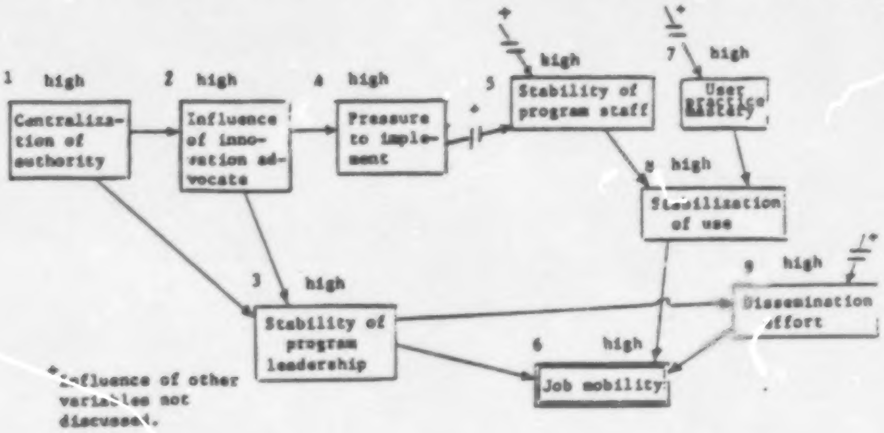

1 high
Centralization of authority
2 high
Administrative pressure
3 high
Influence of innovation advocate
4 high
Program-district fit
5 high
District endorsement
6
Program adoption (mandated)
7 mod
Job mobility
(-)
8 low
Stability of program leadership

The parochial district office was highly centralized(1). It pressed for implementation(2) of the remedial skills project in 45 schools, among which was our target school, and empowered the curriculum coordinator(3) to oversee its execution. The project was judged an appropriate step(4, 5) in unifying curricula at all local schools, and building administrators fell into line. As one user wrote on a feedback form, "[Our school] must obey the wishes of the Archdiocese." After one year of implementation, the project was mandated(6) in all 92 schools of the state's parochial school system. At this point, both the curriculum coordinator and vice-principal were promoted (7,8).*

The oddities here are that the project was barely implemented at the target school and that the curriculum coordinator was new to her job; this was her first major assignment. In neither her or the vice-principal did we detect a craving for professional advancement. Nor do we know whether their reassignments resulted from the program's adoption (thus the broken line or from another calling in the parochial school hierarchy). This may be a site at which we probed too little.

Now to the other sites in this family. First, Tindale, where the remedial reading project was successfully executed and institutionalized:

Fig. 51: Job Mobility as Success Driven Advancement: Tindale(IV-C)


1 high
Centralization of authority
2 high
Influence of innovation advocate
4 high
Pressure to implement
+
5 high
Stability of program staff
+
7 high
User practice mastery
+
8 high
Stabilization of use
3 high
Stability of program leadership
9 high
Dissemination effort
+
6 high
Job mobility
*Influence of other variables not discussed.

--to another site--

---

*We are not certain whether the reassignment of the curriculum coordinator was a promotion or a lateral reassignment. The vice-principal became principal at another school in the Archdiocese. The successful implementation of the innovation was one of several episodes in her capable performance.

Note, as at Astoria, the pressures exerted from centralized district-level administration(1), especially when the administrators are advocates(2) of the innovation. Advocacy and authority make a strong tandem. As Henry Adams wrote, "Power, when wielded with abnormal energy, is the most serious of facts."

Still, up to now, we could be at Astoria or even at Proville. What is different here is that staff and leadership functions remained stable(5,3), and practice mastery(7) and ultimate user commitment(not shown in figure) were high. The success of the project and its leadership stability (3) led to wider dissemination (9) that created opportunities for visibility, and —why not?—new jobs (6).

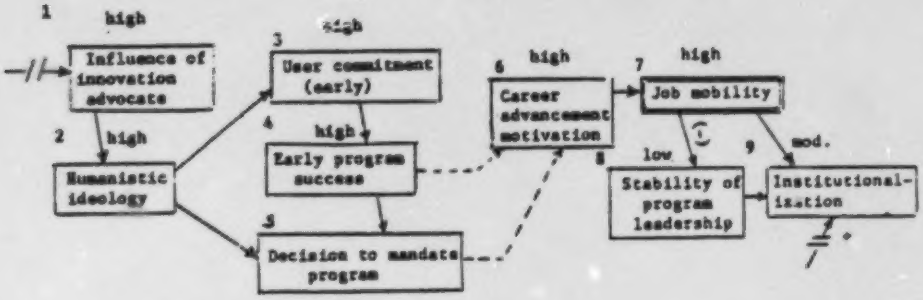
Users moved into building-level administrative slots at Tindale and elsewhere, one of the department heads moved into the central office, and the central office administrator got a more appealing job in another district. No one, however, cried foul. The inference is that upward job mobility was merited in the sense of being "earned" by dint of hard work, and as being a legitimate payoff for successful program execution. Also — a difference from Astoria and Proville — the core staff remained, and former staff members moved into new leadership roles, so the project never broke stride locally.*

---

*We should also note that non-disruptive mobility seemed to be occurring at Masepa. Chart 5 (p.62), shows that the innovation was a means for two users to enter full-time teaching in the district, stabilized another user's job, aided a principal's "visibility", and helped another user become first a turnkey trainer and later a Title I coordinator. As far as we know, no one left Masepa as a result of his/her involvement with the innovation.

Now the network excerpt from Carson:

Fig. 52: Job Mobility as Success-Driven Advancement: Carson(IV-C)


1
high
Influence of innovation advocate
2
high
Humanistic ideology
3
high
User commitment (early)
4
high
Early program success
5
Decision to mandate program
6
high
Career advancement motivation
7
high
Job mobility
8
low
Stability of program leadership
9
mod.
Institutionalization

+indicates influence of variables not discussed.

Some of the same ingredients we saw at Tindale are here: strong advocacy(1) local commitment(3), successful use(4) and administrative constraint(5). As at Tindale, career advancement motives(6) surfaced after successful local use(4), and brought on personnel shifts(7, 8). In this case, the high school principal moved to a larger district (where he could specifically apply what he had learned at Carson), and the program coordinator moved up to a statewide job in instructional TV. Carson, like Tindale and Masepa, kept most of its key actors in place, mainly through a common ideology(2). It differed from Tindale in having less-pressuring leadership; this took some toll on the level of institutionalization.

In both cases, then, we seem to have an emergent, rather than a pre-existent career advancement motive. But we should be careful here. Just because the career shifts happened while we were watching the site does not mean they either originated or crystallized with this innovation. The evidence is stronger that these shifts were contemplated for some time; the project accelerated or matured them. People acted, in part, to be sure, on the strength of their local success, which may have opened doors elsewhere. But they were probably ready to act before then. For example, feeding back on our causal network, a user at Tindale put the reading program in this perspective:

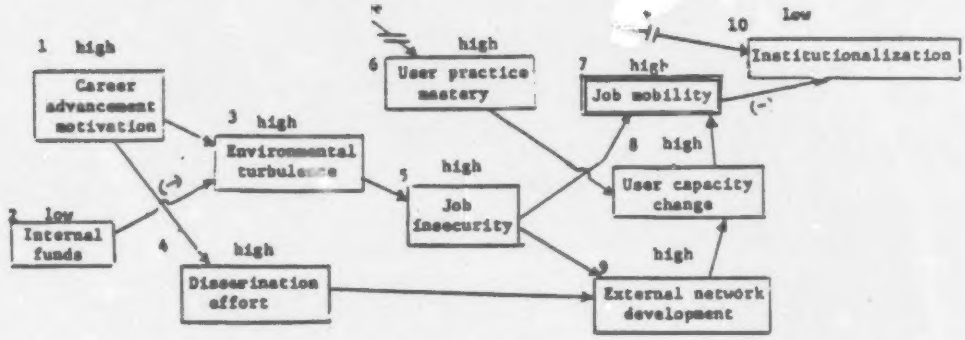
> I'm not certain that all the job mobility was a direct result...It definitely helped one career in particular, but other aspects helped job mobility or caused job mobility for the people involved.*

Win-lose scenarios. Our third family of job mobility cases put together the upbeat features of success-driven mobility and the sad endings of the casualty cases. Plummet and Perry-Parkdale fit this description, and have similar causal networks. Perry-Parkdale's appears in Fig. 53.

---

*Similarly, the Carson program coordinator had had prior experience in educational TV, and was in part motivated to take the state-level job because she lived in the capital and could avoid the commute to Carson. The Carson success was certainly a feather in her cap, however.

Fig. 53: Job mobility as win-lose Scenario: Perry-Parkdale(NDN)


1 high
Career advancement motivation
2 low
Internal funds
3 high
Environmental turbulence
(-)
4 high
Dissemination effort
5 high
Job insecurity
6 high
User practice mastery
7 high
Job mobility
8 high
User capacity change
9 high
External network development
10 low
Institutionalization
(-)
+
+

+ indicates influence of variables not discussed

We recognize from Calston and Banestown the ominous stream from low internal funds(2) to environmental turbulence(3) to job insecurity (5) (at the casualty sites, no one had enough advance warning to be insecure about his job before losing it), and finally to—for the most part, unwanted—job mobility(7). Perry-Parkdale lost 2 of its 3 staff members that way, and institutionalization(10) was thereby weakened.

On the other hand, the stream leading from user practice mastery(6) to user capacity change(8) to job mobility(7) looks more like the "redeeming" path at Proville and the scenario at Tindale. Through progressive mastery, users and administrators developed new skills that they were interested in using elsewhere—preferably, but not necessarily, at a higher level. One user at Perry-Parkdale, for instance, came via the program to a more clearly defined career focus (counseling) and left the project to move that way. But another left because there was no money to stay.

Another already-traveled route to job mobility is shown in the stream from dissemination effort(4) to external network development(9) and ending at job mobility(7). As at Tindale, the dissemination function built into IV-C projects gave administrators a good opportunity to self-advertise for potential job openings. But the project as a whole, both at Plummet and Perry-Parkdale, was weakened by these imminent and actual departures, just as the "casualty cases" had been. As the program director at Perry-Parkdale put it, "things are in a plasma state."

An added note. The causal network for Plummet(not shown) explicitly mentions burnout as a contributor to transfers out of the project. There are similar signs, albeit implicit, at Carson and Perry-Parkdale. What we probably have here, once again, are *multiple* or *cumulative effects* bringing on job mobility. Users or administrators grow *and* re-orient, *and* sometimes get exhausted in the course of program implementation, often coping with environmental turbulence. Dissemination effects increase their visibility and the scouting for other jobs; they think of moving out and, if possible, moving up somewhere else.

Sometimes, though not in the majority of cases, people got where they wanted to go. Administrators, not surprisingly, fared better at this than did teachers. But in most cases, the movement of key people destabilized and hurt the program they had worked to build up. Only at Tindale and perhaps at Masepa did all the ingredients come together, such that the career progressions of the project staff and direction actually reinforced the innovative project locally. The Tindale scenario (Fig. 51) seemed to include most of the facilitating factors we saw at other sites, while excluding the inhibiting factors we found at the "casualty" sites. In this sense Tindale may be a policy-relevant illustration of how career progression can be coupled with stability of staff and leadership.

It could be argued, of course, that mobility that disrupts local programs contributes to another educational enterprise. For example, the Carson principal will probably replicate the IPA program in his new job. Nevertheless, it's important to maintain precious social capital. On balance, one would wish for school improvement programs that could accommodate individuals' needs for career advancement without destabilizing the local gains achieved.

Conclusions

We found a moderate amount of innovation-related job mobility, which typically took place at the creation of the project and during later implementation. About a third of these moves were upward, with teachers moving into supervisory and administrative slots and administrators moving higher in the hierarchy. There was markedly more innovation-related mobility at IV-C sites than at NDN sites.

Looking more closely at the eight sites with moderate to high levels of job mobility, we found 4 families: casualty cases, where most shifting, triggered by unexpected budget crises, was not innovation-related; opportunism, where upward mobility was at the root of the project; success-driven advancement, where project staff were promoted as a result of successful implementation; and win-lose scenarios, which combined the features of success-driven advancement and casualty cases. The key institutional task was that of enabling non-exploitative job mobility without destabilizing the project.

CHAPTER VII

Why School Improvement Succeeds or Fails

Introduction/Overview of Findings

Having examined each of the outcomes separately, noting the clusters of variables preceding and determining the levels of outcome, we are now ready for an integrated look at all six outcomes and their chief determinants. Collating this material will also help us pull together the strands of earlier sections. The overarching question here is whether there are general outcome patterns and, if so, whether they have the same or similar antecedents. If no clear pattern emerges, are there distinct "families" of sites, each with a specific outcome profile and the same causal trails leading there?

To recapitulate briefly the main points of this section, we found four patterns corresponding roughly to different levels of outcome: 1) high outcomes resulting from enforced and stabilized use of the innovation; 2) moderate/high outcomes as a result of high practice mastery and lower institutional settledness; 3) moderate/low outcomes resulting from program "blunting" or "downsizing"; and 4) low outcomes as the fruit of administrative and teacher indifference.

We should also note at the start that these are interrelated, but not nuclear families. That is to say, each member case within a family is more like the others in that family than those in other families, but there are still differences within the families—differences in the level of outcome (e.g., "moderate" for some, "moderate/high" for others), and differences in the ratings and configuration of determinants. At no two sites do we have precisely identical causal nets with identical ratings and paths. We do, however, have reasonably strong overlap on most ratings and on most causal pathways within each of the four families we identified. In brief, our sites sort themselves into meaningful clusters that make sense, illuminating what makes for "success" and "failure" in school improvement. We bracket these two terms to indicate their problematic nature. To take only one example: for a school to stabilize and institutionalize a poor-quality innovation could hardly be called "successful" school improvement. Broadly speaking, we use "success" to mean stable, built-in, widespread use of a well-designed innovation that has positive impact on students and teachers. "Failure" is more complicated, as we shall see.

Levels and Patterns of Outcome

The easiest way to begin is to array the outcomes of the 12 field sites in a "horserace" grid, stretching from winners to losers. This is another version of Chart 30 (p. 313), where we introduced the outcome measures and the relative performance of the 12 sites. Chart 52 translates the ratings into symbols, then weights and sums them, and connects the site to the four "scenarios" we developed in the section on changes in the innovation (pp. 239 ff.). Note that the rudimentary "summed scale" does not include the "job mobility" outcome, which cannot be scaled normatively. More (or less) mobility is not in any clear sense "better", in the way that higher student impact or stronger institutionalization are better for schools.*

The first thing that jumps out of the chart is that, indeed, some sites have done well and others dismally. Tindale has a "perfect" score, with Masepa and Plummet close behind, after which there is more unevenness. Then, beginning with Calston further down the list, we reach the moderate/low sites, then hit the lowest performers. If we look more closely for patterning between the two extremes, it looks as if a subset of higher but not highest-scoring sites--Plummet, Banestown, Perry-Parkdale--has stronger outcomes in the individual or classroom-centered domain (student impact and user capacity change) than in the institutional domain (institutionalization, percentage of use);

---

*Job mobility could help a school by making its accomplishments more visible to the world--or by exporting its poorer staff. Or it could weaken a school through loss of expertise--or by damaging its reputation. It all depends on who leaves, and what their role in the school was.

Chart 52: Performance of 12 Sites on Outcome Measures

	Group/Site	Stabilization of Use	Percentage of Use	Institutionalization	Student Impact	Capacity Change	Summed Scale of Cols. 1-5	Job Mobility	Innovation Change Scenario
1)	Tindale (IV-C)	+	+	+	+	+	15	+	Enforcing
	Masepa (NDN)	÷	+	+/÷	+	+	13.5	-/÷	Enforcing
2)	Plummet (IV-C)	÷	÷	+	+	+	13	÷/+	Overreaching
	Banestown (NDN)	÷	÷	÷	+	+	12	+	Salvaging
	Perry-Parkdale (NDN)	+/÷	÷	-	+	+	11.5	+	Overreaching
	Carson (IV-C)	÷	+	÷	+	+	11	÷	Overreaching
3)	Astoria (NDN)	+	÷	+	÷/-	÷/-	11	÷	Not ascribed - closest is Refitting
	Lido (NDN)	+/÷	÷	+/÷	÷	÷	11	-	Refitting
	Calston (NDN)	+/÷	÷	-	÷	÷/-	9	÷	Refitting
	Burton (NDN)	÷	-	-	-	-/--	5.5	--	Refitting
4)	Dun Hollow (IV-C)	-	-	--	÷/-	-/--	4	—	Refitting
	Proville (IV-C)	-	-	—	-	--	3	+	Salvaging

***Legend**

+ high (3)
÷ moderate (2)
- low (1)
— (nil (0)

Outcome Themes

1) High outcomes from enforced, stabilized use
2) Moderate/high outcomes from high mastery and low settledness
3) Moderate/low outcomes from program blunting/downsizing
4) Low outcomes from indifference and discouragement

BEST COPY AVAILABLE

these sites also have a higher incidence of job mobility.

There is also an obvious relationship between levels of outcome and the four scenarios in the final column, which we evolved in discussing changes in the innovation. Aside from "salvaging", it appears that higher levels of desired outcomes go with "enforcing" and "overreaching" scenarios, and lower levels with "refitting". This tells us that we have to stand back from this thicket of ratings and their multiple determinants to keep in mind what was happening at these sites in the course of project execution. By simply clustering causal paths and outcomes that have similar magnitudes and links, we run the risk of ignoring the dynamics of each case. Causality is always local. Only by cycling back to cases can we assess the true comparability of sites within a cluster.

The scenarios give the first clue to the grouping of sites indicated by numbers 1-4 in the first column, and listed on the bottom of the chart under "outcome themes". To begin with Group 1, Tindale and Masepa are sites with ambitious projects executed under conditions of strong administrative pressure and equally strong administrative assistance.

Group 2 comprises sites which "overreached" in the sense of attempting practice changes beyond their initial capacity or readiness. Overreachers tended to reduce the scope of change later in the life history of the innovation, whereas "salvaging" entailed a gradual reinstatement of core components that were abandoned in the feverish initial phase. In both cases, we have attempts at ambitious practice change: the chart tells us that these sites did well in terms of student impact and user capacity change and less well (except for Plummet) in terms of institutionalization and percentage of use.

A glance at the outcome profile for Group 3 shows its heterogeneity; outcomes are moderate-to-low, but idiosyncratically so. As the scenario and outcome themes suggest, these are places where initially ambitious projects at the classroom or school levels were blunted or downsized, a phenomenon we have analyzed earlier. Downsizing was more strongly characteristic of Astoria and Burton than of Lido and Calston, but in all cases users were given and took advantage of wide latitude to trim and reshape the projects locally. Note that this set is composed solely of NDN projects; we will have more to say about this shortly. The basic theme here is that aiming initially or eventually for a modest change will get you just that, and sometimes less than that.

Earlier, we have often paired the two remaining sites in our discussion of dysfunctional paths to gloomy outcomes. What the members of Group 4 (Dun Hollow and Proville) have in common is that both are "failures", programmatically speaking. Institutionalization is nil; impact is low. Poorly-designed projects died--or were killed--through attrition and lack of commitment.

Now to look in greater detail at the four groups.

High Outcomes From Enforced, Stabilized Use

Throughout this study, we have highlighted successful implementation at some places where administrators exerted strong and continuous pressure on users. Tindale and Masepa are not the only sites where administrative muscle was used; we saw such pressure during the "adoption" phase at virtually all sites, and outright mandating at Carson and Astoria as well, yet outcomes were lower there. What makes Tindale and Masepa different, and accounts for their higher performance on the outcome measures?

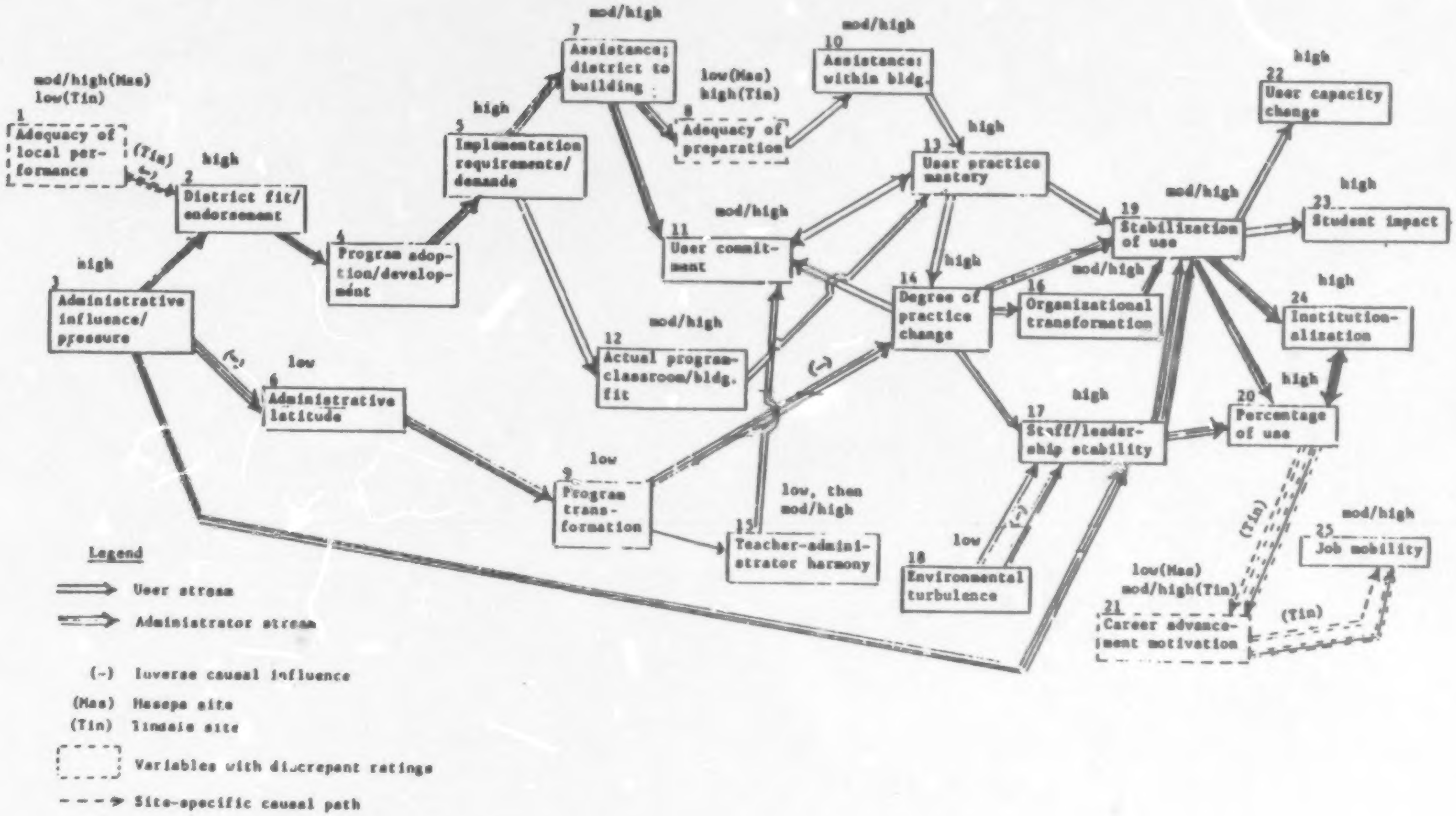
Fig. 54 tries to answer the question by laying out the key predictors and outcomes in a composite causal network. The relatively small number of boxes with broken lines (see legend) suggests that these are very similar cases. Let us walk through the figure.

At both Tindale and Masepa we find good program-district fit and strong district-level endorsement (2), with much of the endorsement and resulting program adoption/development (4) stemming from the influence of central office administrators (3). Fit and endorsement at Tindale were heightened by the fact that the reading program there addressed the problem of declining reading scores (1). At Masepa, there was no strong problem-resolution issue; the ECRI program simply looked good to initial users and local administrators, and it had been well marketed.

What happens next is what sets these sites apart from others. As the bottom region of the network shows, administrative influence and pressure (3) were exerted in the form of low latitude (6) given users to make changes (9) in the project-as-originally designed. This is where the enforcement theme comes into play. Users' initial reaction was negative; they felt "policed" and "professionally violated". Thus, the initially low degree of administrator-teacher harmony (15).

The hallmark of these sites is that friction between administrators and users got resolved, whereas at the low-outcome sites such inter-role friction festered long enough to depress the levels of desired outcomes. The upper region of Fig. 54 shows how conflict resolution was achieved. The program, once adopted or developed (4) required important shifts (5), both within implementing classrooms and in organizational working arrangements. Central

Fig. 54: Group 1: High Outcomes from Mandated, Stable Use


mod/high(Mas)
low(Tin)
1 Adequacy of local performance
(Tin)
2 District fit/endorsement
high
3 Administrative influence/pressure
high
4 Program adoption/development
5 Implementation requirements/demands
high
6 Administrative latitude
low
(-)
7 Assistance; district to building
mod/high
8 Adequacy of preparation
low(Mas)
high(Tin)
9 Program transformation
low
10 Assistance: within bldg.
mod/high
11 User commitment
mod/high
12 Actual program-classroom/bldg. fit
mod/high
13 User practice mastery
high
14 Degree of practice change
high
(-)
15 Teacher-administrator harmony
low, then mod/high
16 Organizational transformation
mod/high
17 Staff/leadership stability
high
18 Environmental turbulence
low
(-)
19 Stabilization of use
mod/high
20 Percentage of use
high
21 Career advancement motivation
low(Mas)
mod/high(Tin)
(Tin)
(Tin)
22 User capacity change
high
23 Student impact
high
24 Institutionalization
high
25 Job mobility
mod/high
Legend
User stream
Administrator stream
(-) Inverse causal influence
(Mas) Masepa site
(Tin) Tindale site
Variables with discrepant ratings
Site-specific causal path

BEST COPY AVAILABLE

office administrators furnished initial assistance (7), in order to heighten users' technical preparation (8); the chart shows that Tindale provided more of such assistance and to better effect than did Masepa. But follow-up assistance (7) from the central office was high at both sites. This, combined with fairly strong within-building support (10), both between users and from building administrators to users, increased user commitment (11) and user practice mastery (13), which also fed one another. It also helped that the implementation requirements (5), while demanding practice and organizational shifts, were not incompatible with ongoing arrangements; the innovation-classroom and innovation-building "fit" (12) was good in both cases, thereby facilitating user mastery (13).

These middle boxes are the crucial ones. Users needed ongoing assistance in the form of materials, training, and consultation, and they got it, both from the district and from the building. Assistance heightened commitment, but more importantly, improved practice mastery. Mastery of a complex, difficult practice led to major practice change (14) which generated further commitment (11), as did reduced friction between teachers and administrators (15). The cycle of mastery → practice change → commitment meant eventually that the teachers came over to the administrators, in return for which the administrators continued to provide ongoing assistance and even gave users a bit more leeway to make changes in some of the project components.

The rest of the story is fairly straightforward. On its way to being institutionalized (24), the project called forth changes in scheduling, record-keeping, curriculum and materials that translated into organizational transformations (16). As the practice, its users and the working conditions surrounding it all settled down into a stable pattern of use (19), teachers consolidated practice changes in the form of expanded repertoires and capacities (22) and further increased student impact (23), which, in these two projects, was high, sometimes dramatically so. Stabilized use, success with students, and new organizational arrangements codifying the innovation all worked in the direction of institutionalizing the innovation (24) and preserving, even extending, the number of users (20). Finally, administrative and user staffing both remained stable (17), and there were no external or internal crises (18) to disrupt local use. At Tindale, the success of the practice led to new career options (21). Senior administrators moved on and users moved up into their slots in the job mobility profile (25) we called "success-driven advancement". The important thing to note is that these shifts did not destabilize the project, either at Tindale or Masepa, where retirement and relocation among key administrators also went smoothly, with few transitional ripples.

The policy-relevant message from these high-outcome sites is that significant practice change can be achieved through benevolently authoritarian forms of management, provided that administrative commitment remains stable, continuing external and internal support are delivered, working arrangements are modified to accommodate the new practice, the fiscal and political environment is neutral or benign, and care is given to the replacement of key actors. (It also helps to have a product of high quality—but this was the case in 10 of our 12 projects and several of those 10 produced lower-grade outcomes.) Finally, as we shall see shortly, there are several ways to high outcomes; enforcement is only one of those paths.

Fig. 54 contains two streams which we have drawn differently, to show that the key variables for users are usually not the same ones as for administrators. For administrators, the key tasks are finding or developing a practice with a good local fit, getting it adopted, providing ongoing technical and institutional support, getting the practice stabilized, extended to a wider public of users and "routinized" in such a way as to incorporate the project in existing training, budget and policy cycles. In this first scenario there is the additional administrative task of keeping the project intact, both in terms of its core components, and through preserving the magnitude of practice change the innovation required of its users.

Users have other fish to fry. What matters to them are the demands made by the innovation on their present skills and on the way they run their classrooms, the initial and ongoing assistance they have available, the degree to which they feel committed to the practice as they get on top of it, the possibility of settling down into a phase of masterful, impact-producing use, and the likelihood of deriving some skills and materials that are transferable to other parts of their yearly repertoire. The successful projects in this group are clearly ones in which *both* agendas, those of administrators and teachers, get met, often because there are mechanisms for containing and resolving the conflict between administrative diktat and users' professed autonomy.

Moderate/High Outcomes from High Mastery and Low Settledness

As a set, the second cluster of sites (Plummet, Banestown, Perry-Parkdale and Carson) achieves well, but not as well as the enforcers. In particular, these are places where users excel and student impacts are strong, yet where such positive individual and classroom-level outcomes don't translate into equally high institutional outcomes. How does this come about?

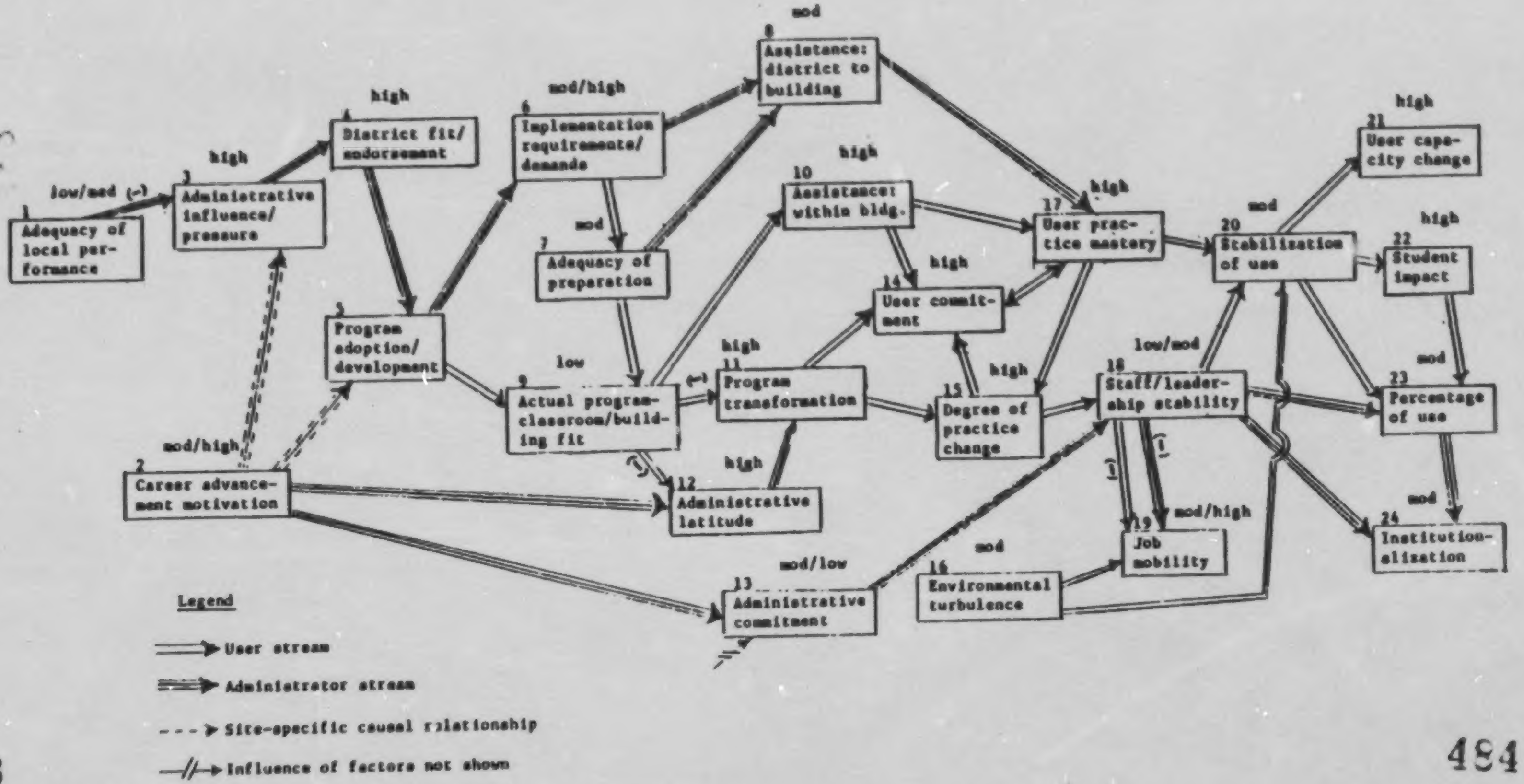
Fig. 55 lays out the progression of determinants, using most of the same variables as in Fig. 54. Let us go quickly through this scenario, then contrast it with the "enforcement" sites.

The first antecedent variables seta different tone from the first outcome pattern. Here, we have more of a problem-solving impetus; both Banestown and Plummet were facing crises, and Carson and Perry-Parkdale evolved practices that met fairly strong local needs. In all cases, local performance was judged to be suboptimal (1). This set the stage for administrative pressure (3) to adopt or develop a program (5) whose characteristics matched district needs (4).

There was, however, a second impetus in this group of projects: career ambitions (2), both on the part of administrators and teachers. These projects were not, as in Proville, simple vehicles for promotion, but they seemed to attract people with interests in moving in, moving up or moving someone else up. Ultimately, these career-centered motivations weakened the projects, but initially, they provided energy and muscle.

Projects in this group were demanding (6), less in their institutional ramifications than in the efforts they required of users. Preparation, both technical and political, was adequate (7), as was central office assistance (8) in the initial year. In practice, however, users found that the innovations were problem-prone, that their fit to local conditions was poor (9). The program was too fluid at Banestown; users floundered. Staff at Perry-Parkdale and Carson struggled feverishly to make the practices work without undue overload. The lack of match between program characteristics and students was nearly catastrophic at Plummet. Poor fit had two important consequences. First, users sought, and got, authorization from project admini-

Fig. 55: Group 2: Moderate/High Outcomes from High Mastery and Low Settledness


low/med (–)
1 Adequacy of local performance
high
3 Administrative influence/pressure
high
4 District fit/endorsement
5 Program adoption/development
mod/high
6 Implementation requirements/demands
mod
7 Adequacy of preparation
mod
8 Assistance: district to building
low
9 Actual program-classroom/building fit
high
10 Assistance: within bldg.
(–)
high
11 Program transformation
high
12 Administrative latitude
mod/high
2 Career advancement motivation
mod/low
13 Administrative commitment
high
14 User commitment
high
15 Degree of practice change
mod
16 Environmental turbulence
high
17 User practice mastery
low/mod
18 Staff/leadership stability
mod/high
19 Job mobility
mod
20 Stabilization of use
high
21 User capacity change
high
22 Student impact
mod
23 Percentage of use
mod
24 Institutionalization
Legend
User stream
Administrator stream
Site-specific causal relationship
Influence of factors not shown

strators (12) to make changes in the project (11). While these changes sometimes reduced the scope and bite of the innovation, notably at Carson, the degree of practice change (15) remained high. In part, this was due to the fact that users were thrust into organizationally novel roles: a new pull-out remedial lab at Banestown, an entirely new institution at Plummet, an autonomous program spanning two high schools at Perry-Parkdale, and a major counseling function added to instructional roles at Carson. Poor fit (9) also triggered within-building assistance (10), which in turn heightened user commitment (14) and practice mastery (17). In effect, the sites in this group rank highest in lateral assistance. The institutional response to "overreaching" was, from the start, mutual help, which often lent a "crusading" flavor to the implementation process, notably at Plummet and Carson. These are sites at which users worked hardest, and did so under relatively little administrative pressure. The fruit of that work was high practice change (15), strong practice mastery (17), and, through stabilization of the technical aspects of the innovation (20), high student impact (22) and user capacity change (21), notably in terms of user attitudes and relationships. People at these sites had learned to look at themselves and their pupils differently, whereas users at "enforcement" sites felt technically, instructionally and managerially stronger.

The assistance-mastery-commitment cycle is the sunny side of these sites, and accounts for the strong individual- and classroom-level outcomes, but there is also a more shadowy side. For users, poor local fit, together with continuous adaptation of the project and high degrees of practice change under conditions of uncertainty, produced attrition. At Perry-Parkdale and

Plummet, there were clear signs of burnout. At Banestown, users began to look tentatively elsewhere. At Carson, users responded to role overload by watering down the innovation. Attrition, combined with the relative success of the practices, also revived or crystallized career advancement motivations. Near the end of our field research, users began to leave the projects (19)—many left the site altogether. The lowered staff stability (18) lowered stabilization of use (20) and the percentage of project users (23). At the same time, three of these four sites were hit with budget cuts (16) as a result of which some users - notably at Banestown and Perry-Parkdale - were thrust back into conventional classroom slots. These are the "win-lose" scenarios we sketched in the section on job mobility. The success of the project helped some achieve career goals, but environmental turbulence sacrificed others to unwanted reassignments.

Administrators also began disengaging. What these four projects have in common, along with the Lido site, is that later administrative commitment (13), at the project, building or central office level, either waned or got directed elsewhere. The reasons were several, and vary by site: changes in administrative authority (Banestown, Plummet), central office turnover (Perry-Parkdale), departure of key innovation advocates (Carson, Lido, Plummet). But there is also the nagging sense at all sites in this group that key building and district administrators, or even project directors, were on the make, and that incipient success or turbulence were signals to move—up, if possible. Looking back at Masepa and Tindale, most of the career shifts were either promotions within the project (e.g., at Tindale, from users to department heads or department heads to building- and district-level slots connected to the innovation) or were career-innocent (e.g., at Masepa, retirement and change of residence when a husband was reassigned). But in our "overreaching" group, on the other hand, the trend was toward career shifts out of the project—often out of the district—either for more opportunistic reasons or because of environmental turbulence. In either case, leadership stability was weakened (18), with attendant effects on job mobility (19), on stabilization of use (20), on the numbers of users (23) - who, typically, dropped or remained roughly constant - and, even more consequentially, on the level of institutionalization (24). Because these innovations succeeded and core users remained, short-term continuity was assured. But the mixture of environmental uncertainty and fickleness or turnover on the part of key administrators undermined the institutional routinization required for longer-term survival.

This group of projects illustrates the fact that new practices can be introduced and consolidated without heavy administrative strong-arming, and that at the outset career-driven motives can accelerate adoption. The necessary conditions appear to be administrative flexibility, strong lateral assistance and adaptive program transformation that resolve poor local fit while preserving significant practice change.

The problem appears to be that as users achieve masterful owernship of the practice, some burn out and others revive career ambitions. Nor do career-driven administrators appear to build lasting commitment to projects they sponsor or lead, so that success or turbulence are prompts to move on. Although the stakes they pull up unsettle the rest of the enterprise, the school improvement effort stays reasonably well in place on the strength of its achievements.

Finally, the respective user and administrator "streams" show once again that different role incumbents have different agendas. In this project group, the administrator stream moves in two directions. First, it addresses the resolution of local problems by championing projects with a good district-level fit. That role calls for meeting implementation requirements with pre-implementation assistance and at least minimal follow-up support. In parallel, there is the career advancement stream that drives, at least in part, local adoption and the kind of administrative flexibility that enhances the chance of success. However, that stream also flows into more opportunistic waters, such that later commitment may wane, leadership stability may weaken, job mobility increase and the scope and durability of the practice be made uncertain.

The user stream, by contrast, is closer to that of the "enforcement" group. Users focus on adequate preparation, local workability and the necessary assistance and program transformations needed to achieve practice mastery. This in turn produces desirable local effects: significant practice change, user commitment, technical stabilization, student impact and user capacity change. But given untoward contextual features, the same causal chain can spell trouble. Poor fit, high program transformation and a high degree of practice change can also deplete users who, when caught up in career mobility or local turbulence, can destabilize projects when they leave.

Moderate/Low Outcomes from Program Blunting/Downsizing

Group 3 (Astoria, Lido, Calston and Burton) is more of a mongrel than the others. This shows up immediately on Chart 52, where the outcome patterns are various. Only Lido and Calston seem to belong in the same ballpark, and Burton seems to be in another, lower league. Still, these sites share some common features that make them a coherent cluster. For one thing, their outcomes are modest - in the case of Burton, very modest. More usefully, their outcomes are modest for the same reasons: innovations which were not major ventures to begin with have been still further reduced in scale and scope, so that major change gets ruled out and outcomes are correspondingly limited. The reductions take place at the instructional level. Users, given near-discretionary latitude by administrators to make changes, locally refit the innovations, and in so doing, stabilize them as minor add-ons or drop-ins. The refitting is done by unbundling external (NDN) projects and using only those components that are congenial to personal teaching styles, and call for few changes in ongoing instructional routines. There is one additional thread that ties this group together and connects it thematically to Group 2: for three of the four sites, later administrative leadership is low. Key innovation advocates at the building or district level back off, leave or get reassigned.

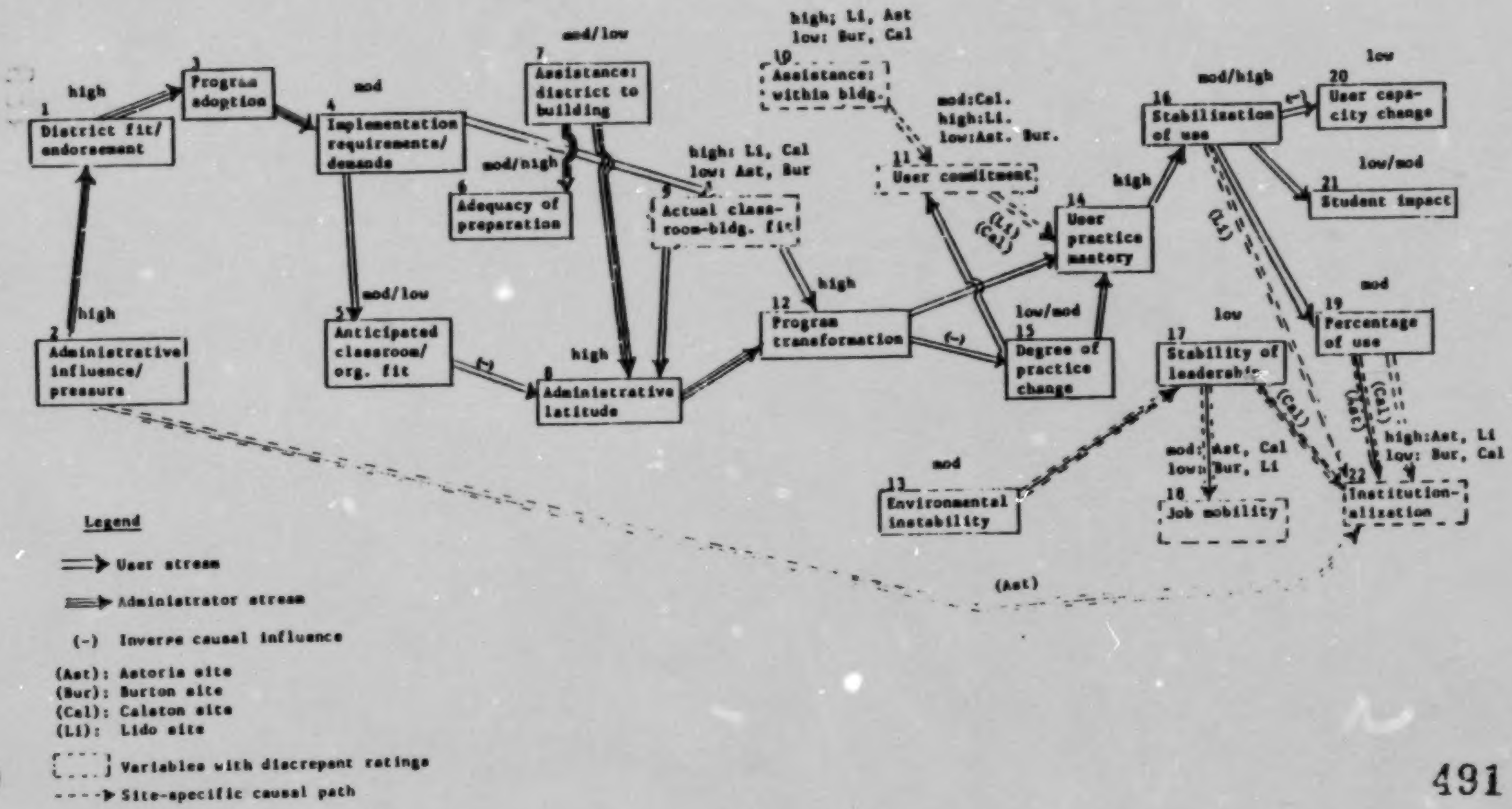
Beyond this, we have a group with different tales to tell. Fig. 56 assembles those tales in one place, and indicates between-site differences.*

Let us walk through Fig. 56, stressing the features common to the majority of sites in this group. First, there is no major problem-solving incentive

---

*Those differences stand out in two places. First, there are five variables with discrepant within-group ratings: within-building assistance, actual program-classoom/building fit, user commitment, job mobility and institutionalization. Moreover, these discrepancies are not constant across variables. The causal paths also show some between-site differences. For example, at Lido moderate-high stabilization of use improves institutionalization (see the broken arrow between the two variables coded "Li"), but this is not the case for the three remaining sites. Or again: low stability of leadership impedes institutionalization at Calston (see the broken arrow coded "Cal"), but doesn't markedly reduce institutionalization at Astoria or Lido. So within a few larger commonalities we have several idiosyncracies.

Fig. 56: Group 3: Moderate/Low Outcomes from Program Blunting/Downsizing


high; Li, Ast
low: Bur, Cal
mod/low
1 District fit/ endorsement
high
3 Program adoption
mod
4 Implementation requirements/ demands
7 Assistance: district to building
10 Assistance: within bldg.
mod:Cal.
high:Li.
low:Ast. Bur.
11 User commitment
mod/high
16 Stabilization of use
low
20 User capacity change
(-)
mod/high
6 Adequacy of preparation
high: Li, Cal
low: Ast, Bur
9 Actual classroom-bldg. fit
(Li)
(Cal)
14 User practice mastery
high
low/mod
21 Student impact
(Li)
mod/low
high
high
2 Administrative influence/ pressure
5 Anticipated classroom/ org. fit
(-)
high
8 Administrative latitude
12 Program transformation
(-)
low/mod
15 Degree of practice change
low
17 Stability of leadership
mod
19 Percentage of use
(Cal)
(Ast)
(Cal)
mod: Ast, Cal
low: Bur, Li
high:Ast, Li
low: Bur, Cal
mod
13 Environmental instability
18 Job mobility
22 Institutionalization
(Ast)
Legend
User stream
Administrator stream
(-) Inverse causal influence
(Ast): Astoria site
(Bur): Burton site
(Cal): Calston site
(Li): Lido site
Variables with discrepant ratings
Site-specific causal path

at these sites, although Calston was after higher reading scores when it adopted the Matteson 4D program. Nor do we have a strong career advancement motif. People may have had an eye out for occasions to facilitate a career move, but they were not zooming in as intensively as were personnel in the "overreaching" group or at Proville (see below). Otherwise, the first phase resembles Groups 1 and 2: strong central office influence and pressure (2), except at Lido; good district fit and strong endorsement (1) leading to program adoption (3).

As a set, these sites adopted modest add-on and drop-in products, but if used as designed, they could be moderately demanding (4). The Calston reading project called for within-classroom differentiation and stringent record-keeping. The innovations at Burton and Lido would put teachers in unfamiliar and unconventional instructional roles. At Astoria, to use the early educational skills project as designed would have entailed major curriculum and scheduling changes. The key variable cluster, especially for Burton and Astoria, starts here. Anticipated and actual poor fit (5, 9) induced users to seek latitude from administrators (8) to trim or reconfigure the innovation, both before actual program execution and once work was underway. The latitude was forthcoming, and so was high program transformation (12), typically in the form of reducing program components, so that degrees of practice change were, at best, modest (15). Because these were "downsized" versions of an already modest innovation, institutionally speaking, practice mastery (14) was achieved without much stress, and the practice itself settled down fairly quickly (16). But its settling into a small-scale, unthreatening enterprise meant there was no substantial impact either on students (21) or on users themselves (20). Still, because many or most of the potential users were participants in the project, percentage of use (19) was moderate overall and usually improved chances for institutionalization (22).

The user stream in this downsizing-refitting scenario is new in several respects. Unlike the "enforcement" sites, users took control over the projects and, in so doing, "blunted" them in the sense of reducing possible impacts. Note, however, that user ownership need not necessarily translate into lowered practice change. For example, strong commitment and good within-staff assistance brought users in the "overreaching" sites to maintain a high level of practice change and achieve local impact. As Fig. 56 indicates, we also have high peer assistance, user commitment and practice mastery at Lido, in a pattern akin to the second group. But the remaining sites show a different pattern for the assistance-mastery-practice change-commitment cycle. The critical difference is that practice change, which could have been high in Lido and Calston, was only moderate to low--because program transformation had sapped its demands. As for Astoria and Burton, commitment and mastery were low to begin with, even though Astoria's within-building mutual assistance was strong.

The best way to read the remainder of the figure is by following the administrative stream. District administrators tended to stand back once the program was adopted. Note that district-to-building assistance (7) was not strong, but probably diddn't need to be in the initial phase since these small-scale projects could manage with brief initial preparation (6). As the figure shows, administrators "helped" most by granting latitude to make changes (8). At Burton, it was the central office administrator who authorized discretionary changes, but elsewhere authorization came from building administrators.

We pick up the administrative stream later on, with a key tandem of variables, environmental instability (13) and stability of leadership (17). At only one site, Calston, was there outright environmental turbulence, in the form of budget cuts that knocked the key innovation advocate out of the central office and thereby weakened institutionalization. Elsewhere, however, there was also movement. The changes in principal, school building and student population demoralized users at Lido and reduced the scope of the project. The Archdiocese at Astoria reassigned both the key innovation advocate in the central office and the vice principal leading the team of users. By contrast, Burton was calm. So at three of the four sites there were leadership changes (17) which translated in two cases into a high incidence of job mobility (18) and into less secure institutionalization (22) at Calston and possibly at Lido. As the figure shows, institutionalization at Astoria was helped by outright mandating (2), despite low levels of impact.

Failing: Low Outcomes From Indifference and Discouragement

Dun Hollow and Proville are both sites where innovations "failed". The quotation marks indicate an important qualification: though institutionalization was judged "nil" in both sites, there is good reason to think that the innovations were of poor quality and should have been dropped. Still, we must note (a) that coherent implementation efforts might well have salvaged the innovations; (b) a good deal of energy was wasted in both sites.

Although Burton, for example, had few commendable impacts, respondents felt a few segments of the social studies curriculum might get written into the high school curriculum, and most users expected to be implementing some facet, however trivial, of the project the following year. By contrast, Dun Hollow was considered locally to be a pilot project that failed; there were no formal plans for continuation the following year. Similarly, the vocational educational project at Proville was considered "dead" by the end of our fieldwork;

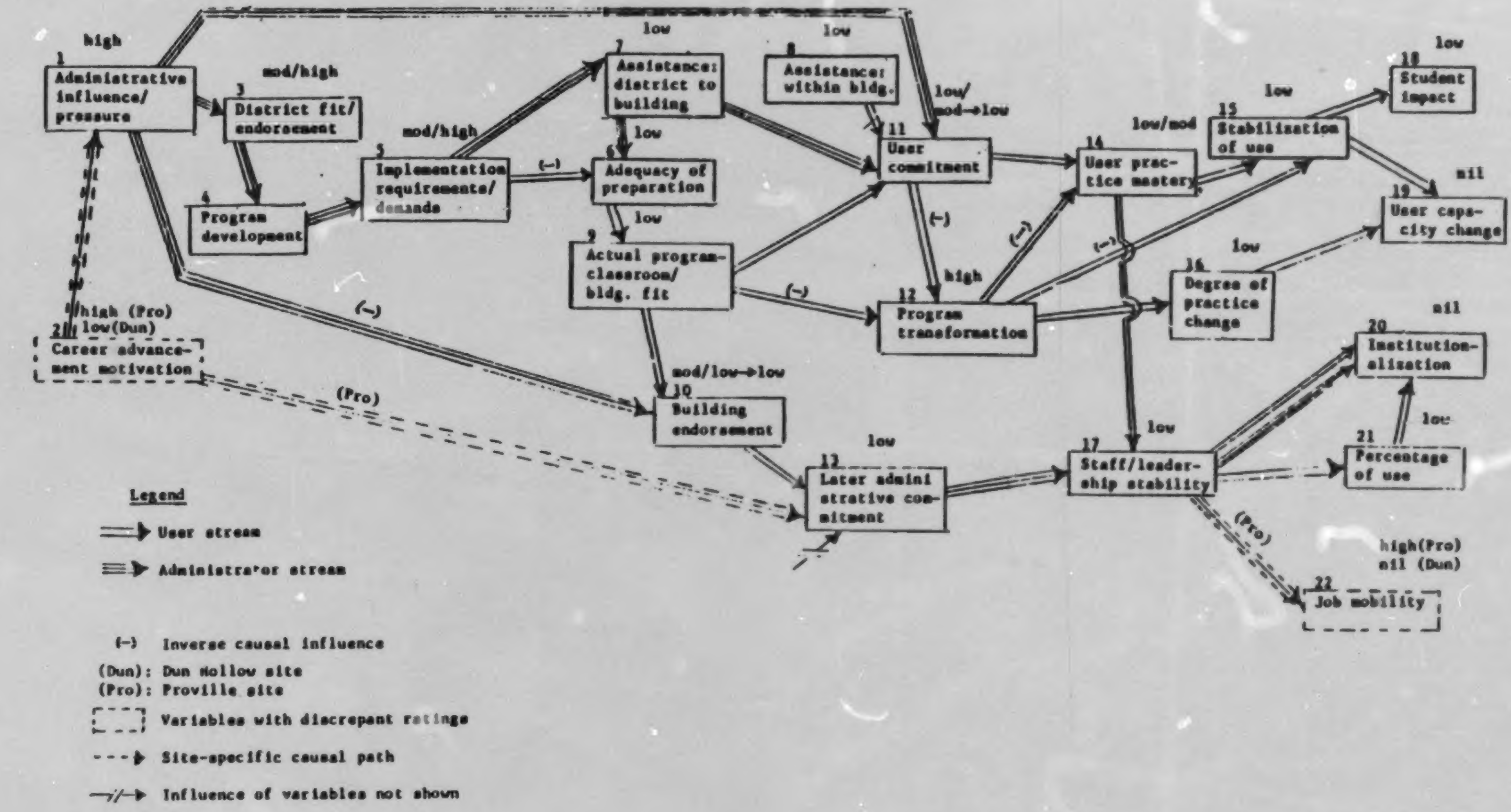
a very minor segment had been incorporated in a special education project addressing a different student population.

Fig. 57 displays the common routes to failure, using the same core variables as for the three previous groups. Although most of the ratings and causal paths are the same for Dun Hollow and Proville, many of the contextual features are different and warrant between-site distinctions. In effect, just as there are different ways to succeed, there are also different ways to fail.

In capsule form, the scenario at Proville is spelled out in the bottom stream of the figure. Central office administrators and their protégés advanced their careers (2) via the innovation, by pushing the project (1), assuring its endorsement (3) and development (4), then half-heartedly administering it (13) while they lobbied for promotions within and outside the district. Absences of and changes in leadership (17) led to desired job changes (22) at the price of project failure; institutionalization (20) was nil.

This is, however, not the whole story. To go through the flow chart: at both sites central office administrators pressed for district-level approval (3) and development (4) of the project. In both cases, the motives were opportunistic: career-centered in the case of Proville, and political at Dun Hollow, where the superintendent sought to improve relationships with a regional center disseminating the innovation. Note, however, that both projects were of potential interest to the district (3), although they were demanding (5) locally. The vocational educational program at Proville, if run correctly, would call for coordination among teachers, employers and trainers around pupil scheduling and academic work. The Eskimo project at Dun Hollow was an integrated social studies unit requiring teachers to create much of their own material and to integrate it in the regular syllabus. Unfortunately, users

Fig. 57: Group 4: Low Outcomes from Indiff rence and Discouragement


high
1 Administrative influence/ pressure
mod/high
3 District fit/ endorsement
4 Program development
mod/high
5 Implementation requirements/ demands
(–)
low
7 Assistance: district to building
low
6 Adequacy of preparation
low
9 Actual program-classroom/ bldg. fit
low
8 Assistance: within bldg.
low/ mod→low
11 User commitment
(–)
high
12 Program transformation
(–)
low/mod
14 User practice mastery
(–)
low
15 Stabilization of use
low
18 Student impact
nil
19 User capacity change
low
16 Degree of practice change
nil
20 Institutionalization
low
21 Percentage of use
low
17 Staff/leadership stability
(Pro)
high(Pro) nil (Dun)
22 Job mobility
low
13 Later administrative commitment
mod/low→low
10 Building endorsement
(–)
(Pro)
high (Pro) low(Dun)
2 Career advancement motivation
Legend
User stream
Administrator stream
(–) Inverse causal influence
(Dun): Dun Hollow site
(Pro): Proville site
Variables with discrepant ratings
Site-specific causal path
Influence of variables not shown

at both sites got little assistance (7) and were ill-prepared (6).

Stopping here a moment, we should note that "adequacy of preparation" was a more crucial variable at these sites than elsewhere, but for different reasons. It was not only that users were technically underprepared as, for example, at Masepa or Banestown. Pedagogically, both practices were manageable. Rather, the project itself was faulty—ill-designed for the target grade levels at Dun Hollow, very sketchily thought out at Proville. Note that the local-development aspect of IV-C programs in effect permits either adequate or poor design. The Tindale program was very well thought through; the Carson one carefully but too-ambitiously done; and Plummet developed a design that proved very poorly fitted to the actual incoming student population. Proville and Dun Hollow seem to be at the bottom of the IV-C barrel. Less thought went into them. Less expertise gravitated toward them. In many respects they were lemons.*

We should also note that both projects began with lukewarm support. User commitment (11) was low-moderate at the outset, largely because of heavy-handed administrative pressure to implement (1), but also because the innovations were poorly designed and created problems of coordination and overload at the classroom or building levels (9). In addition, building administrators, especially at Proville, had also been pressured and were skeptical (10) both of the merits of and motives for implementing the project. While we had other sites with moderate-low building endorsement, either on the part of the principal and/or other teachers not involved in the project (e.g., Perry-Parkdale, Banestown), initial levels of user commitment were higher. What we have here are under-designed or poorly-designed innovations, forced on lukewarm users and principals who are suspicious of the project's origins and who realize when they start in that the projects are full of bugs. It is not an auspicious beginning, and things get worse when needed assistance (7,8) is weak.

---

* The "guaranteed" quality of NDN projects does not, of course, guarantee easy implementation, which as we have seen (ex: Masepa) can be replete with poor initial preparation, and lack of resources and materials. But the NDN projects' soundness held up better when they came under fire than did these two poorly-designed IV-C ones.

At several points in this volume, we have stressed the importance of user commitment, in itself and as a function of user practice mastery. In all cases, if initial commitment was low, it tended to be boosted by the presence of district-level and peer assistance, by the experience of mastery and the resulting change in practice, and by gradually-improving classroom or building fit. As the level of commitment rose, so did further practice mastery and, ultimately, stabilization of use. This is essentially the pattern for outcome Groups 1 and 2. In Group 4, on the other hand, levels of commitment declined rapidly. At Dun Hollow, users tried to revamp the Eskimo project on the run, jettisoned much of it in frustration and either left the project altogether or reduced its use drastically. At Proville, teachers stayed briefly with the practice, felt it was more trouble than it was worth and opted out. Mapping this progression on Fig. 57, we have poor fit (9), lowering commitment (11), and both of these producing program transformation (12), increasingly in the direction of erasing the project from use. Practice mastery (14) was weak as a result of frustrated attempts to make the project work (Dun Hollow), or because of outright desertion (Proville). Low mastery, coupled with program reduction and desertion (12) produced low practice change (16) and low stabilization of use (15), which further depressed student impact

(18) and user capacity change (19). There was simply too little going on to have any meaningful effect. As staff left the project (17), the number of users dropped (21) and the probability of institutionalization (21) became —probably fortunately--remote.

Given such poor starting conditions, it is difficult to see how that chain of events could have been broken. One possibility would have been to offer better assistance, and encourage peer support, with the possibility that the innovation's design could have been improved through user feedback. But as Fig. 57 shows (7,8) neither district-level nor lateral support appeared. External technical assistance at Dun Hollow was sporadic and inefficient, and building-level norms seemed to work against lateral assistance. At Proville, district administrators were busy elsewhere, or were too unstable in their roles (17) to stay abreast. Users were scattered throughout four participating high schools, with little opportunity to collaborate.

The low level of administrative assistance betrayed the lack of administrative commitment (13) in the later stages of the project. There was simply no local advocate sufficiently committed nor even sufficiently present to keep the projects alive. This also meant that district-level administrators were unwilling or unavailable to counter the passive (Dun Hollow) or active (Proville) resistance of building administrators, which in turn suggested to the central office that it was better to let the projects die than to waste energy on them (see arrow from box 10 to box 13). And die they did—in both cases from the discouragement and desertion of users (11) and at Proville from leadership shifts (17) and the attendant job-hopping of ex-project administrators (17,22). In a sense these two "failure" cases can be seen as a successful effort by users to protect their schools against poorly-conceived ideas.

Looking separately at the user and administrator streams is especially instructive here. It is clear that users did not get the enabling conditions they needed to survive and succeed, as did users in outcome groups 1 and 2. To cope successfully with poorly-designed, demanding, ill-fitting practices, users need responsive assistance, and follow-up support both from the district and within the building. Neither was forthcoming here. We also saw earlier that commitment is a key item and gets built through practice mastery leading to practice change, through assistance and a strong administrative presence—all of which were lacking or low here. Administrators who, especially in later phases, were absent (Group 4), inconsistent (Group 3) or overly permissive (Group 3 again) set the stage for lower stabilization of use, student impact and user capacity change.

Following the administrator stream shows that pressure exerted for purely opportunistic reasons or in defense of an ill-prepared product gets innovations in trouble right off the bat with users and building principals. When this is combined with indifferent monitoring and ministering to the project, administrators are likely to get even lower local commitment and endorsement, both of which sap the energy required of users to get on top of the practice and to deliver its potential outcomes. When administrators turn away from innovations, by busying themselves elsewhere or jumping ship, users are likely to respond in kind, with few resulting chances of project continuation. The most favorable reading of the situation is that the "wisdom of the user" has prevailed.

Conclusions

The most logical way to study the outcomes of innovations and their determinants is to seek outcome clusters that share distinctive causal paths. By displaying five of the six outcomes on a grid going from the most successful to least successful projects, we found four global patterns. The first pattern (two sites), associated with high levels of outcome on all the criterion measures, turns around "enforcement" as a means of implementation. Local administrators lobbied successfully for a complex and demanding project, then imposed it or pressured users to adopt it. Program execution was highly prescriptive, which at first exacerbated users' resistance. User-administrator conflict diminished as users received district-to-building assistance along with lateral assistance, grappled successfully with the practice, felt increasingly committed and began to see concrete and beneficial effects with regard to pupils and to their own instructional repertoires. Administrators looked after the institutional requirements for rooting the innovation firmly in the school and district, and for ensuring continued project leadership when there was turnover among staff and supervisors. A benign political and fiscal environment further helped institutionalization.

The second group of projects (four sites), which we called "overreaching", achieved a slightly lower level of desired outcomes. These were equally ambitious, change-bearing practices that entered the district through central office advocacy but which, unlike the first group, were somewhat entangled in the career plans of key people sponsoring and executing the project. Users coped under conditions of uncertainty, more often than not bailing themselves out as they went. Administrators provided initial and follow-up support, especially in the initial phases, and authorized users to make execution more manageable by making changes in the innovation. Through intense peer assistance and strong ownership of the practice, users worked through to fairly strong levels of mastery and project-relevant outcomes. They also came out at the end with changed perceptions about their roles and relationships. In the process, however, they tended toward exhaustion and responded by reducing somewhat the gradient of practice change, or by reviving career interests that would take them out of the district. Environmental turbulence accentuated staff instability along with leadership instability, as program and district administrators moved out or were reassigned. Personnel turnover, along with lower levels of later administrative commitment, cast some doubt on the future extent and longevity of use at the site.

The next group of projects (four sites), which we called "blunting/downsizing", achieved moderate to low outcomes as a result of reducing the scale, scope and teacher-transforming aspects of NDN innovations. These were innovations posing problems of local fit that triggered user demands to make changes. Administrators anticipated or acceded to these demands, both prior to and during project execution, in part to gain local endorsement. The result was a substantially reduced and adopted-for-convenience practice, whose impact could at best be modest. Because of later instability of leadership and environmental uncertainties, the innovation was not institutionally secure.

Finally, in two sites we have low outcomes: the label there was "indifference/discouragement." Implementation was marred initially by opportunism, ham-fisted strong-arming and inadequate design work, all on the part of central office or regional administrators. Users were largely pushed into execution of a project that needed major de-bugging. When district-level or building-level help was not forthcoming, users gradually abandoned the practice with the implicit benediction of building administrators. In parallel, the original program advocates pulled back or left the site, so that project effects were trivial and continuation ,fortunately, was a dead letter.

So there are several routes to school improvement, played out by the different, sometimes colliding agendas of administrators and users. That only two of our cases turned out to be wasteful of energy and deadening to hopes is encouraging. It appears that if administrators maintain serious commitment to change, are not afraid to exert direct influence, use their power to protect the innovation from opportunistic adaptation, and above all, supply a steady flow of support, success is likely. But they alone cannot ensure success. Users need to help each other, to enhance their mastery of the innovation, to change their usual classroom practice—be *stretched*—and to sustain and develop their commitment in the process. Above all, the working connections, problem-solving abilities and conflict-management skills between users and administrators are essential for the people in these two worlds of innovation to complement each others' efforts productively. Finally, it is clear that if good-quality, non-trivial innovations enter this process—or get developed during it—they can have a significant impact on both pupils and teachers.

CHAPTER VIII

WHAT HAVE WE LEARNED?
SUMMARY AND INTEGRATION OF FINDINGS

Our travels on the implementation voyage with our twelve sites have led us to some conclusions we consider well-founded. We believe our sites are a good sample of schools and districts who have been carrying out innovation-based school improvement programs under the aegis of the National Diffusion Network and Title IV-C, and we believe we got close enough to the realities of those programs and the people doing them to understand what happened in them over time, and why.

This chapter reviews our conclusions, clustering related findings and making some general comments as we proceed. We reference the sections from which the findings are drawn. A concluding section recasts the findings in terms of dilemmas faced during school improvement.

Our Findings in Review

Settings and actors. Educational innovations, as exemplified in the NDN and IV-C programs, appear to be adopted or developed in districts with at least a "moderate" past interest in new programs, and reasonable environmental stability. The implementing schools, on the other hand, are more traditional. Much of the district-level dynamism for school improvement comes from central office administrators, often coordinators or assistant superintendents for curriculum and instruction, who keep their eyes open for promising practices outside the district, or energetically promote a local product. The central office administrator thus becomes the prime advocate of the new practice, often reaching directly into the schools to implement it and thereby leaving the building principals to play a secondary role. (See pp.50-54)

Motives and attitudes toward adoption. Innovations are adopted as the result of multiple, sometimes tangled, motives. Nearly half of users adopt the new practice by dint of administrative pressure, but they are usually neutral to favorable to it, especially when the innovation is central or salient. When pressure is lower, users often invoke motives of professional growth; the practice might build up their instructional repertoire, help them in other aspects of their teaching, put them in contact with specialists, stretch them beyond what they are doing presently. In brief, there is less user interest in innovation-specific benefits than in second-order rewards.

Administrators,who live in a different institutional world, are more interested in improving classroom-level instruction or school-wide management, but they also like the added funds and resources made available by externally assisted projects. It is noteworthy that in only a few cases does adoption result from a perceived problem to which the innovation is seen as a solution, either by users or by administrators.

In roughly half the cases, incentives for adoption are tied up with career plans for moving in, over, up or away or, alternatively, for consolidating one's position. Looking at the later phases of these innovations, too many career-driven incentives cripple a project, but too few deprive it of the necessary energy to follow through to stable continuation. Sometimes, career incentives surface later in the life of the project - notably at places where implementation is successful. But unwanted job mobility can also occur as a result of unexpected budget and personnel cuts. (See pp. 60-75, and 416-430.)

Initial perceptions and assessments. The twelve innovations studied here, ranging from reading programs to career education and a complete alternative school, are representative of those supported by NDN and IV-C. About half are aimed at low-ability students, both elementary and secondary programs are included, and most are non-trivial, with moderately-demanding implementation requirements.

Such innovations pose problems initially for their target users, who size them up as complex, hard to do, unclear and flexible—sometimes too flexible. The classroom fit is seen as only fair; users feel the new practice will make demands calling for substantial changes in the ways they manage their yearly work.

By contrast, most administrators see the practice initially as relatively simple, straightforward and manageable, and anticipate varying amounts of organizational change to result from adoption. There is a tendency for administrators to overweight the merits and minimize the drawbacks of the practice, and to be ready to jump in with the intention of setting things right as problems arise. (See pp. 83-108.)

Early implementation. Following on these perceptions, it appears that users make better predictions than administrators. Initial use is nearly always rough; few sites experience a smooth early period. At the classroom level, teachers complain of day-to-day coping, unsuccessful attempts to "make it work like it's supposed to," continuous cycles of trial and error, inability to get through daily or weekly segments and the sacrifice of other core activities. Surprisingly, degree of preparedness is an influential but not decisive predictor of smoothness of early use. In terms of preparedness, smooth-starting sites are helped by the provision of resources and materials - a key provision, since so many of these innovations are materials-centered. Rough-starting sites are hurt by lack of user commitment and understanding of the practice, by insufficient or unavailable materials, and by inadequate skills and training. Still, training is less crucial than prior experience--both its amount and its appropriateness to the demands of the innovation.

In terms of desirable outcomes, smooth early use is a bad sign. Smoothly-implementing sites seem to get that way by reducing the initial scale of the project and by lowering the gradient of actual practice change. This "downsizing" gets rid of most headaches during initial implementation, but also throws away most of the potential rewards; the project often turns into a modest, sometimes trivial enterprise. By contrast, most of the initially rough-implementing sites, including those which later produce the strongest outcomes, remain ambitious, change-inducing and ill-fitting, all of which make for difficult initial use but can deliver significant practice change.

To a large extent, the basic tension in school-based innovation is that of hanging on to the initial magnitude of practice change in the midst of poor local fit and general system stress. This tension involves the users of the innovation, but it also relates closely to what administrators do when a change-bearing project upsets local practices and procedures. Administrators who respond favorably - and rapidly - to users' requests to make changes in the innovation often consent implicitly to a watering down of projects, and, thereby, to far more modest results. Those who hold out for fidelity to the original model may initially get cast in unpleasant authoritarian roles, but can, under certain conditions, deliver more sizeable results. (See pp. 109-136.)

Assistance. Large-scale, change-bearing innovations live or die by the amount and quality of assistance their users receive once the change process is under way. More help is forthcoming when projects are more ambitious; smaller-scale ventures require and get less internal or external aid. The forms of assistance are various. High-assistance sites set up external conferences, in-service training sessions, visits, committee structures, and team meetings. They also furnish a lot of ongoing assistance in the form of materials, peer consultation, access to external consultants and rapid access to central office personnel. Even close relatives help out a good deal, often by hand-holding and talking through difficulties. Although strong assistance doesn't usually succeed in smoothing the way in early implementation, especially for more demanding innovations, it pays handsome dividends later on by substantially increasing levels of commitment and practice mastery. (See pp. 137-176.)

Transformations in innovations over time. As new practices are executed, they get modified. From the moment of initial use to the end of data collection, over half the sites change from one-third to two-thirds of the core components of the innovation-as-designed, by variously reducing them, adding to them or reconfiguring them. Also, there is greater attrition over time. Whether and how much an innovation is changed depends on the intensity of demands it makes locally and, in response to that, on the micropolitics of schools. A poor innovation-classroom fit leads users to ask building administrators for authorization to make changes. A poor innovation-building fit leads principals to do the same at the central office.

At least four different scenarios get played out in this process. There is first an "enforcement" scenario, whereby administrators hold out for and get faithful execution of a large-scale, demanding practice, but provide generous amounts of supportive within-district assistance. Next, "overreaching" innovations begin with a faithful version which they are forced to cut back considerably as problems multiply and local staff wear out. In a "salvaging" scenario, projects that are ambitious but ill-prepared locally are cut back initially, but some of the original components are reinstated later on. Finally, smaller-scale innovations can be "locally refitted" by successive changes that tend to deplete the new practice of its original substance. (See pp. 213-249.)

Change in users' practices and perceptions. In the course of consolidating a new practice, there are often substantial and widespread changes in users' practices and attitudes: changes in everyday classroom routines, expansion of instructional repertoires, changes in interpersonal ties, cognitive growth, shifts in attitudes toward pupils or peers, shifts in professional self-image, and transfers of innovation-specific skills to other parts of one's practice. Users in this sample typically see themselves as having become better "clinicians" - more instructionally skillful, better able to diagnose and differentiate instructional treatments - and as being interpersonally closer to pupils.

About half the sites report moderate to high levels of user practice change stemming from the innovation. At high-change sites, the projects begin with a vengeance, users report pervasive changes (not only changes in routines but also changes in core constructs), users take a long time to settle down with the project, the innovation consumes all available energy and negative changes are also reported (ex., loss of variety, sacrifice of other, favorite activities). Low-change sites have the reverse profile: timid beginnings, modest changes in daily routines, rapid practice mastery, the innovation perceived as a small change in the yearly cycle, few negative feelings about the practice,and the sense, on the part of users, of not having been stretched by the experience. (See pp. 250-276.)

Most of these new skills, constructs and attitudes derived from experience with the innovation, and often applicable beyond it, are maintained or extended during later use. Places with few of these *user capacity changes* turn out that way by allowing sizeable and project-reductive changes, by failing to deliver adequate assistance, and by failing to ensure user commitment. High-change sites, by contrast, maintain initial levels of practice change by providing good assistance and by gaining local acceptance. In one family of sites, strong administrative and peer assistance help to maintain strong practice change, which then translates into gains in general capacity. In another family, strong practice change and resulting capacity growth comes from administrative strong-arming coupled with consistent assistance. (See pp. 401-415.)

Transformations in the school as an organization. Innovations in the NDN and Title IV-C programs studied do not seem, in the main, to bring about organizational changes beyond those associated with introducing and institutionalizing the new practice itself. But there are exceptions. They seem to occur when there is outside pressure for change, demographic shifts, a needy student population, and a recent history of district-level innovativeness. These are the pre-conditions for the choice of a larger-scale project, with some stiff implementation requirements in terms of school-level changes needed to execute the project successfully. Local administrators, especially in the central office, are highly committed and deliver necessary assistance, aided in part by the funding that comes with larger-scale innovations. Assistance is appropriately problem-centered and builds on a cooperative institutional climate. As the project is successfully implemented and extended, the school-level structure and working procedures shift to accommodate to the requirements of the practice. Making that shift successfully, however, calls for sustained administrator pressure, stemming from administrative commitment. When commitment is lower, there is less administrative pressure and more latitude given to users, with the result that implementation is less thorough-going and organizational change is correspondingly weaker. (See pp. 277-310.)

Later implementation and stabilization of use. Gradually users and their innovations settle down. Firm practice mastery usually comes within 18 months in the case of complex projects, and within 6 months in the case of "downsized" innovations. Most of the later implementation time is spent on reaching up (taking on more demanding segments), de-bugging outstanding flaws, refining and codifying weekly routines, integrating new materials into existing ones, adapting the practice to ongoing changes in the pupil population and extending the innovation to other activities. Users also work their way through to a more differentiated and integrated understanding of the innovation by making it behave consistently. (See pp. 177-212.)

It is typical to achieve at least a moderate degree of stabilization, but there are various ways of getting there. The most common path is via technical mastery of the practice, which results from adequate initial preparation and - especially - follow-up assistance, plus strong local endorsement in the building and district, and users' commitment to the project. Such commitment is often the result of practice mastery rather than its antecedent. In capsule form, what happens in higher-stabilizing schools is that users confront a new practice which turns out to be even more challenging and demanding than they had expected. They take on the challenge, struggle, receive support from peers and sources outside the school and gradually get on top of the innovation, heightening their commitment as the effort they have expended bears fruit. When assistance is less frequent, not sustained, or of a single type, there are markedly lower levels of commitment and practice mastery.

By itself, however, practice mastery does not ensure stabilization of use. That also comes from stability in pupil and program characteristics, staff and leadership stability and building-level endorsement. Endorsement is sometimes hard to get, especially since innovations often complicate institutional life for people who are not direct actors. The core task here is to negotiate a better innovation-building fit without throwing out the change-carrying features of the project. (See pp. 317-337.)

Achieving widespread use. An important objective in the innovation process is extending a new practice to the full pool of eligible users in the school and district, or, alternatively, achieving full use for a specific target group. Most sites come out with at least moderate levels of local diffusion. They do it essentially by maintaining administrative pressure on users during implementation while furnishing within-building and district-to-building assistance that, in turn, leads to stronger user commitment, user mastery and impact on students. Administrative pressure by itself - the administrator as thug - gets nowhere; users remain uncommitted, minimally skillful and locked into teacher-administrator disharmony that eventually does the project in. (See pp. 338-354.)

Impact on students. Innovations are meant, in the first instance, to enhance pupils' performance and performance-related attitudes. It is clear that both externally-developed (NDN) and locally-developed (IV-C) innovations can achieve such gains. The evidence here is compelling, if not always robust, that impacts are substantial at about half our sites and moderate at several others. The higher-impact sites get there in one of two ways: via "stabilized mastery" (strong user commitment fed by good assistance leading to practice mastery and stabilization of use) or via "enforcement" (administrative pressure, leavened by good district-to-school assistance, and little latitude given users to make changes in the innovation). By contrast, low student impact results from low user commitment and/or "program-blunting," i.e., taking out the more ambitious or demanding components and thereby trivializing the potential effects. (See pp. 381-400.)

Institutionalization. To maintain both the impact on students and widespread use, innovations need to shed their novelty or experimental status and become a durable feature in the local landscape. Effective current operations are not enough. Durability occurs when the innovation successfully completes important passages (such as the transition from soft to hard money) and when it survives organizational cycles (such as yearly budget cycles and personnel turnover). At about half our field sites, new practices get durably built into the district administration and curriculum.

Strong institutionalization seems to require some administrative pressure, lack of serious local resistance and at least minimal teacher-administrator harmony. It also thrives on staff and leadership stability, organizational transformations that root the new practice in local structures and procedures, and levels of assistance adequate to bring about stabilized use by a large percentage of eligible users. One path to high institutionalization stems from administrative mandate; another goes via strong user commitment and practice mastery. Low-institutionalizing sites are characterized either by vulnerability (administrators don't protect the new practice against internal resistance or external turbulence) or by indifference (administrators don't work hard to supply local assistance and protection; users disband). (See pp. 355-380.)

Looking across outcomes. Most site personnel are interested in optimal results: good stabilization of use, widespread use, strong impact on students, user capacity changes and institutionalization. Three of our sites do especially well, two miserably, and most lie in between. A prominent - but not the only - way to high outcomes on all these dimensions comes from enforced, stabilized implementation. Local administrators exert muscle along with tutoring and tenderness. They know the projects well, tolerate few changes in the original design, provide good and timely assistance, get users to accept or get committed to the practice, maintain a steep gradient of practice change, ensure staff and leadership continuity and protect the innovation from external turbulence.

A second high-outcome scenario calls for committed users and supportive administrators to embark on a venture that goes beyond their initial capacities. Users are thrust into new roles or new organizational settings and gradually work their way, drawing heavily on peer assistance, to high practice mastery, strong commitment and substantial student impact. In some cases, however, these strong classroom-level and individual-level outcomes don't translate into equally strong institutional outcomes. That occurs when users wear out, when both users and administrators are riding the innovation to new jobs and when external turbulence is high. As project staff and leadership turn over or redirect energies, there is a drop in levels of institutionalization and internal diffusion.

Moderate-to-low outcomes across the board are associated with sites where project "downsizing" or "blunting" occur. Although these innovations are not major ventures, they tend to get further reduced in scale and force when program-classroom fit is low and users ask for, and get, latitude to make changes. The ultimate level of practice change is modest, as are levels of practice mastery and stabilization of use. Most other outcomes are insubstantial. Institutionalization is further compromised by later instability in leadership - the key innovation advocates back off, leave or get reassigned - and by some environmental uncertainties as well.

Finally, failure to achieve any substantial outcomes is the result of local indifference and discouragement. Adoption stems from largely opportunistic motives. The innovations, while demanding, are poorly prepared, are ill-fitting locally and gain at best lukewarm support from users and building administrators who have been pressured into doing the project. There is little later administrative commitment to provide assistance, or to look to local institutionalization. Users respond to the poor design, poor local fit and lack of support by discarding much of the practice, or by simply opting out, so that use is discontinued, perhaps fortunately. Still, there is little effort to salvage or improve the innovation, and much energy is wasted. (See pp. 431-460.)

School Improvement: Some Basic Dilemmas

Our findings can be viewed integratively as the story of what happens when school personnel face key dilemmas in their day-to-day work. A dilemma requires a choice between two competing "goods", which set up a tension that must be resolved one way or another.* The people we studied faced countless dilemmas as they worked to improve their schools—some explicit,clear, even rationally considered, and others vague, fuzzy, and intuitively approached. Here we focus on six core dilemmas that seemed to recur in our sites. In some cases we can suggest the conditions under which one horn or the other of a dilemma may be "right", but in others we will have to content ourselves with pointing to the dilemma as a crucial agenda for administrators and users, who will have to—as they always do in any case—make their own resolutions.

Fidelity vs. adaptation. Should innovations be "done right", carefully, according to the spirit and letter of their developers' intents? Or should they be adapted to fit local realities, to permit an even fuller and better implementation? In our sites, adaptation always took place--but it was sometimes constrained by administrators' stout refusal to permit adaptation that would weaken or water down the innovation. Enforcing fidelity for substantial, good-quality innovations really paid off---if it was accompanied by effective assistance. When adaptation went too far because of administrative "latitude", what often occurred was blunting/downsizing, trivialization, and weak student impact. Only in sites where there was strong user commitment (and perhaps some degree of protection from environmental pressure through creation of a "subsystem"), did substantial adaptation improve the innovation. As Fullan and Pomfret (1977) and Berman (1981) point out, user-oriented adaptation may be more necessary for complex, less clearly-structured innovations that demand a strong user commitment to inquiry, learning, and revision. The basic choice for administrators and users remains: how far do we protect the innovation from damaging changes, and how far do we creatively fit it to local realities?

---

*For additional discussion of the idea of dilemma-resolution in educational improvement, see Miles et al,(1978) and Miles (1981).

Centralized vs. dispersed influence. Should central office and building administrators unabashedly exert direct influence, make demands, press for implementation? Or should more weight be given to the knowledge and professional expertise of teachers—who after all are centrally responsible for delivering the innovation to students? We found that "enforcement" scenarios could be quite effective--if, as we suggested, the "muscle" was accompanied by "tutoring and tenderness". We also found that teachers—without pressure from above—were quite capable, given district-level assistance, of providing further assistance to each other, and struggling through to mastery of demanding innovations, and to student impact, growing professionally in the process. The underlying issue here is perhaps that of commitment. Administrative pressure without support and commitment simply leads to teacher resistance and failure; user influence over implementation without commitment to the spirit of the innovation leads to blunting/downsizing. But note: strong administrative influence need not mean low user commitment—that can be developed during supported implementation.

The worlds of administrators and users are very different. Many studies (see Miles, 1981) have shown that decisions in schools are "zoned"--some belong to administrators, others to teachers. There are "influence discontinuities". The question is whether to place the implementation of a school improvement effort squarely in the administrator zone, or the teacher zone. Straddles will probably run into difficulty.

Coordination vs. flexibility. Should the work of educational improvement be carried out in an interdependent, "tightly coupled", carefully designed way? Or is it more important to leave users latitude, flexibility, room for flexibility? This dilemma is not the same as that of centralized vs. dispersed influence: it is possible to have centralized systems that allow much local flexibility (cf. Astoria in our study), or dispersed-influence systems which have close coordination among peers (cf. Masepa in our study). We found that efforts to develop cooperation, coordination and conflict resolution across the differing worlds of administrators and users were often critical for successful implementation--and that it was often important to lay off from close supervision, giving dedicated professionals the chance to invent, adapt and extend. Many of our administrators acted as if they believed the innovation would be easy, simple, and coordinatable without tears; users knew better. The basic tension remains: how closely-knit should the implementation effort be, and how much "local variation/autonomy/creativity should be present? (Too much flexibility can mean lower percentages of use and weaker institutionalization, by the way.)

Ambitiousness vs. practicality. Should innovations be taken on that are demanding, far-reaching, stretching, pervasive--even if that means stress and possible failure? Or should schools choose smaller-scale changes that can work, succeed, make a more modest but also more predictable difference? Most of the innovations we studied were non-trivial in original concept. At first they looked hard and demanding to most users. If ambitiousness was maintained, organizational change was more likely, and users often were stretched, grew, became much stronger as teachers--but they also ran into stress and burnout. Ambitious efforts sometimes fell into our "overreaching" scenario, where cutbacks had to be made later on, or "salvaging" operations, where, sadder but wiser, people picked out pieces of the innovation from the wreckage of original hopes. There is a case for practicality. But over-emphasis on it, resulting in fatally-"smooth" early implementation, got our sites little. The question remains: how high should sights be set----and what are the costs in personal stress, failed hopes, and eventual cynicism about future change efforts that one is willing to risk? Attempt more, get more. But "more" can mean more negative effects as well. One of the clearly important adjuncts of the decision to go the ambitious route is sustained assistance; without it, large-scale programs will simply backfire or wither.

Change vs. stability. Ultimately, should schools try to be improving, at all? The question may seem foolish or the answer self-evident; "of course" changes for the better are to be desired. But change can also be disruptive, wasteful of resources; it may be far more important at any given point for a school to be doing a good job with familiar, well-tested instructional practices that have stood the test of time. Innovations always disrupt people's working lives to some extent.

We found that successful implementation required a careful, sometimes alternating attention to both horns of this dilemma. For example, implementing a more-than-trivial change usually required up to 18 months of sustained effort before something like "settledness" and user mastery had stabilized. The problems of achieving that stability, and maintaining the stability of personnel needed for continued effective implementation, had to be kept in view by both users and administrators. Effective change requires a stable platform—though the platform itself may get transformed gradually during the process.

Career development vs. local capacity. This dilemma is especially ironic and painful. In our sites, it was often those people who were most successful with an innovation that were most likely to get or seek a job somewhere else--away from the classroom, or in another district The local effort was weakened by their departure. Initially, career development interests often strengthened the "bite" of an innovative effort—but often served later on to destabilize it.

Looking at the dilemma the other way, primary emphasis on "local capacity" means a thorough-going implementation, and strengthening of the local school and district--but at the possible price of slowing down or hampering professionals' natural needs to grow, develop and extend their horizons. Some of our sites managed the tension effectively by supporting internal, non-disruptive career moves--but many did not. The task is how to avoid the "failures of success", so that innovative efforts do not become automatically self-limiting.

Lists of dilemmas like these can promote the idea that all is a trade-off, and that everything "depends". Life is not so ambiguous, in fact. Most of our sites were successful in resolving these dilemmas productively; they achieved moderate to strong positive outcomes. That finding stems, we think, from the fact that administrators and teachers, though they live in different worlds and have different agendas, can, under the right circumstances, complement each other's efforts productively. Administrators who are committed can push, protect the innovation from casual adaptation, and supply supportive assistance. Users can follow their own professional growth motivation to master the innovation, help each other, extend their own classroom practice and deepen their commitment. If administrators and users can successfully work together to meet their differing agendas, using good quality, substantial innovations, there will be clear student impact. Schools can, it seems, improve, and we can now see more distinctly just how they do it.

REFERENCES

Berman, P. (1981) Educational change: an implementation paradigm. In R. Lehming & M. Kane (Eds.) Improving schools: using what we know. Beverly Hills, CA: Sage.

Berman, P. and McLaughlin, M.W. (1974-78) Federal programs supporting educational change. Santa Monica, CA; Rand Corporation

Vol. I. A model of educational change. R-1589/1-HEW, 1974.
Vol. II. Factors affecting change agent projects. R-1589/2-HEW, 1975.
Vol. III. The process of change. R-1589/3-HEW, 1975.
Vol. IV. The findings in review. R-1589/4-HEW, 1975.
Vol. V. Executive summary. R-1589/5-HEW, 1975.
Vol. VI. Implementing and sustaining Title VII bilingual projects. R-1589/6-HEW, 1976.
Vol. VII. Factors affecting implementation and continuation. R-1589/7-HEW, 1977.
Vol. VIII. Implementing and sustaining innovations. R-1589/8-HEW, 1978.

Blake, R.R. and Mouton, J.S. (1976) Consultation. Reading, MA: Addison-Wesley.

Douglas, J.D. (1976) Investigative social research: individual and team field research. Beverly Hills, CA: Sage.

Downs, G.W., Jr. and Mohr, L.B. (1976) Conceptual issues in the study of innovation. Administrative Science Quarterly, 21:700-714.

Fullan, M. (1982) The meaning of educational change. New York: Teachers College Press, and Toronto: OISE Publications.

Fullan, M., and Pomfret A. (1977) Research on curriculum and instruction implementation. Review of Educational Research, 47, 1:335-397.

Goetz, J.P. and LeCompte, M.D. (1981) Ethnographic research and the problem of data reduction. Anthropology and Education Quarterly, 12(1):51-70.

Gold, B.A. and Miles, M.B. (1981) Whose school is it anyway? Parent-teacher conflict over an innovative school. New York: Praeger.

Hall, G. (1976) The study of individual teacher and professor concerns about innovations. Journal of Teacher Education, 27(11): 22-23.

Hall, G. and George, A.A. (1978) Stages of concern about the innovation: the concept, verification, and implications. Austin, TX: University of Texas R & D Center for Teacher Education.

Hall, G., Loucks, S.F., Rutherford, W. and Newlove, B. (1975) Levels of use of the innovation: a framework for analyzing innovation adoption. Journal of Teacher Education, 26(1): 52-56.

Heck, S., Stiegelbauer, S., Hall, G. and Loucks, S.F. (1981) Measuring innovation configurations: procedures and applications. Austin, TX: University of Texas R & D Center for Teacher Education.

Huberman, A.M. and Miles, M.B. (1982) Deriving valid meaning from qualitative data: some techniques of data reduction and display. Paper read to Symposium on Advances in the Analysis of Qualitative Data, American Educational Research Association meetings.

Lawrence, D.H. and Festinger, L. (1962) Determinants and reinforcements: the psychology of insufficient reward. Stanford, CA: Stanford University Press.

Lippitt, G and Lippitt, R. (1978) The consulting process in action. La Jolla: University Associates.

Loucks, S.F., Newlove, B. and Hall, G. (1975) Measuring levels of use of the innovation: a manual for trainers, interviewers and raters. Austin, TX: University of Texas R & D Center for Teacher Education.

Louis, K.S., Rosenblum, S. and Molitor, J.A. (1981) Strategies for knowledge use and school improvement. Washington: National Institute of Education.

Mann, D. (1978) The user-driven system and a modest proposal. In D. Mann (Ed.) Making change happen. New York: Teachers College Press. Pp. 285-307.

McLaughlin, M.W. (1976) Implementation as mutual adaptation: change in classroom organization. In W. Williams and R.F. Elmore (Eds.) Social program implementation. New York: Academic Press. Pp. 167-80.

Miles, M.B. (1972) The development of innovative climates in educational organizations. Tijdschrift voor Agologie, 1:16-33.

Miles, M.B. (1980) Innovation from the ground up: dilemmas of planning and implementing new schools. New York University Education Quarterly, 11 (2): 2-9.

Miles, M.B. (1981) Mapping the common properties of schools. In R. Lehming & M. Kane (Eds.) Improving schools: using what we know. Beverly Hills, CA: Sage.

Miles, M.B., & Huberman, A.M. Analyzing qualitative data: a sourcebook of new methods. New York: Center for Policy Research, 1982.

Miles, M.B., Sullivan, E.W., Gold, B.A., Taylor, B.L., Sieber, S.D.. and Wilder, D.E. (1978) Planning and implementing new schools: a general framework. In Final Report, Part I, Project on Social Architecture in Education. NIE-G-74-0051. New York: Center for Policy Research.

Mulhauser, F. (1975) Ethnography and policy-making: the case of education. Human Organization, 34: 311-315.

Nash, N. and Culbertson (Eds.) (1977) Linking processes in educational improvement. Columbus, OH: University Council for Educational Administration.

Paul, D.A. (1977) Change processes at the elementary, secondary and post-secondary levels of education. In N. Nash and J. Culbertson (Eds.) Linking processes in educational improvement. Columbus, OH: University Council for Educational Administration.

Runkel, P.J., Wyant, S.H., Bell, W.E. and Runkel, M. (1980) Organizational renewal in a school district. Eugene, OR: Center for Educational Policy and Management, University of Oregon.

Schmidt, W.H. and Johnston, A.V. (1977) A continuum of counsultancy styles. Los Angeles: University of Southern California, School of Public Administration Working Papers.

Weick, K. (1976) Educational organizations as loosely coupled systems. Administrative Science Quarterly, 21: 1-9.

Wilson, S. (1977) The use of ethnographic techniques in educational research. Review of Educational Research, 47: 245-266.

Wiske, M.S. (1981) A study of dissemination policy in ESEA Title I. In Final Report, Study of Dissemination Efforts Supporting School Improvement. Andover, MA: The Network, Inc.

Zaltman, G., Duncan, R., and Holbek, J. (1973) Innovations and organizations. New York: Wiley.

LIST OF APPENDICES

A. Research questions guiding the study
B. Handout explaining the field study to sites
C. Interview schedule, users
D. Data collection effort and methods, by site
E. Sensitizing codes, and operational definitions
F. Example of an organizational chart
G. Example of an event listing
H. Example of a growth gradient chart
I. Example of an event-state network
J. Example of a causal network and associated text
K. Comparison of survey "fidelity" data with field study "innovation change" data

Appendix A

RESEARCH EMPHASES AND QUESTIONS

1. Introduction

The research emphases and questions derive from our general mandate, as well as from the conceptual focus outlined in the previous section. We conceive our mandate in the following way:

a. To provide a history of each case in the sense of documenting the introduction, transformation, and possible institutionalization of alternative school improvement practices; to recapture the sequence of events, developmental stages and histories of the innovation within the school building.

b. To account for the form, succession and overall pattern of these case histories (to explain the outcomes) by analyzing the transformations of the innovation, the institution and the users as they interact in a patterned social environment.

c. To render both the case histories and the causal or configurational analyses comparable across the 12 sites and capable of integration with the data generated by the cross-sectional study.

2. Research emphases

In line with the conceptual model and the ethnographic research mandate, we have identified seven research emphases which reflect our above-mentioned concerns: documenting and analyzing an evolutionary process, which is sited in the dynamics of the institutional setting (rules, working arrangements, mandates, norms, relational networks, etc.), but carried out essentially at the level of the individual user or non-user affected by the innovation, and involving a series of transformations that lead to changes in individual and organizational practices or perceptions.

Questions which relate most centrally to these emphases are set off by asterisks. The remaining questions are designed to provide documentary, descriptive and contextual information. This information will allow us both to fulfill our mandate and to substantiate analyses bearing directly on our research emphases. As a result, the sum of questions is large and comprehensive, but we have established priorities within that larger set for sharper focus and greater investment.

Each research emphasis is listed, then described briefly in a paragraph that focuses on its essence. Under each research emphasis, we then list sub-questions: each of these in turn has a brief descriptive paragraph. We do not attempt to be exhaustive in terms of specific indicators, or probes that a field researcher might use. Rather, we want to be as clear as possible about the questions, so they can be used as a guide for our oral history and other interviews, for our observations, analysis of documents and organization charts and for constructing codes to analyze our write-ups (see sections E and F below).

3.1 The characteristics or properties of the innovation itself.

What is the innovation supposed to accomplish (for its users and for children)? How does it work, in terms of materials, roles and groups involved, and user behavior? What sorts of explicit or implicit demands does it make for change in the classroom or organizational setting?

3.1.1. What are the key characteristics of the new program, as presented by its developers?

What is its primary objective: what outcomes or benefits are claimed? How is it structured (within-classroom, pull-out program, or new subsystem)? Who carries it out and how (staffing, space, materials, schedule)?

NOTE: Data on this do not come from regular ethnographic work, but from the configuration interviews, the available documents, (EPW, flyers, proposals, etc.). At least, that seems true for NDN. For IV-C we may need to collect further data through interviews.

3.1.2. Which of these characteristics were most salient for people at local sites?*

Which aspects of the new program stood out, and why? Was there consensus among users? Did users and administrators see the same main points? If not, why?

3.1.3. How did local site people view the new program in relation to its eventual implementation?

Did they see it as complex, unclear, difficult to use (or straightforward, clear, easy)? Did they believe they had latitude to change some parts, or choose only some of them? How much prior training and ongoing assistance did they think they would need?

3.1.4. What changes did local site people think would have to occur from existing conditions at the classroom level during implementation?

These might be formal (staffing, materials, space use, time use, teaching methods) or informal (attitudes, relationships). How substantial were such changes expected to be? What changes were thought necessary in relation to user's own typical, routine in class?

3.1.5. What changes did local site people think would have to occur from existing conditions at the organizational level during implementation?

These might be formal or informal as noted above, and also include matters such as budgeting, authority and responsibility, planning and monitoring, relations with the local district or outside agencies. How substantial were such changes expected to be?

---

*Most of the sub-questions are phrased in the past tense to remind us that a great deal of the data, for the majority of our sites, will be retrospective.

3.2. The context of the school as a social organization, prior to implementation.

What experience did the school have with adopting other new programs? What was the school like (its teachers, administrators, students), and what rules, norms, and working arrangements governed their activities? What were the characteristics of the community and the district in which the school is located? What were the key events and actors (prime movers, resisters) involved before the decision to adopt was made? What incentives and sanctions were in play?

3.2.1. What is the school's history in adopting other new programs?

How many new programs has it adopted in the past several years, and of what type (curriculum, organization for instruction, etc.)? Does innovation seem to be an important part of this school's operation? How satisfied are school people with their attempts to modify classroom or organizational practices? Is there an ongoing problem-solving or capacity-building stance (maybe evidenced by a planning committee, etc.)?

3.2.2. Which contextual factors, within the school building, seemed relevant to the choice of this new program?

In general, how was teaching being carried out (styles, approaches, practices)? How much and what types of experience did teachers, administrators, specialists, and other support personnel have? What was the student population like (ethnic and economic background, achievement levels, experience with new programs of this kind)? What was the organizational climate like (norms, social networks, tolerance of diversity, collaborativeness, energy investment, administrative support)?

3.2.3. Which contextual factors, outside the school building, seemed relevant to the choice of this new program?

What was the ethnic, social and economic composition of the community? Was the district urban, suburban, or rural? What stance toward the program was taken by the school board, the district office, the PTA, the larger community? What was the political climate at the time toward new programs, e.g., openness to experimentation, conservative budget slashing? What was the nature of school-community relations in terms of involvement of community in educational decisions, financial and moral support of school operations?

3.2.4. What were the antecedent events and key actors involved in the consideration of this new program?

What was the chronology of significant events? Who favored the decision, and who opposed it? Who were opinion leaders, gatekeepers? What arguments or justifications were offered? Do there seem to be several versions or a general consensus regarding the nature of the choice of this program? Are there tacit, unwritten, private versions?

3.2.5. How was the choice of this program affected by school personnel's response to it as one that came from outside the district, inside it, or inside the building where it was to be implemented?

In particular, how did users, non-users, and building administrators participate and respond?

3.2.6. What were the manifest and latent reasons of teachers and administrators that led to the choice of this new program?

Which formal reasons are given (ex: improvement of practice, increase in funds or personnel, responding to community pressure, solving classroom problems, keeping up to date, etc.)? Which latent reasons are admitted or inferred (ex: gains in power or prestige, career mobility, boredom, avoidance, peer contact, getting out of the classroom)? Were there actual sanctions for resisting adoption (peer ostracism, isolation, administrative punishments)?

3.2.7. How important was the "fit" between the (perceived) innovation and the personal teaching style of prospective users as part of the process of selecting it for implementation?

This ties back to 3.1.2. and 3.1.3., but focuses more on how the new program's key characteristics connect or conflict with potential users' values, goals for children, preferred or congenial ways of working.

3.3 The adoption decision.

Who was involved in the decision to adopt this program? How important was the new program perceived to be to school personnel? What sort of plan for implementation was set up? Did it seem that the conditions were present that would permit carrying out the plan? How responsive was the plan to the various issues noted under 3.1.3, 3.1.4., and 3.1.5.?

3.3.1. How was the adoption decision made?

Who was involved (ex: principal, users, central office people, school board, outside agencies)? How was the decision made (top-down, persuasive, consultative, collegial-participative, or delegated styles)?

3.3.2. How much priority and centrality did the new program have, at the time of the adoption decision?

How much support and commitment was there from administrators? How important was it for teachers, seen in relation to their routine, "ordinary" activities, and any other innovations that were being contemplated or attempted? Realistically, how large did it loom in the scheme of things? Was it a one-time event or one of a series?

3.3.3. What were the components of the original plan for implementation?

These might have included front-end training, monitoring and debugging/troubleshooting unexpected problems, ongoing support. How precise and elaborate was this plan? Were people satisfied with it at the time? Did it deal with all the problems anticipated?

3.3.4. Were the requisite conditions for implementation assured before it began?

These might have included commitment, understanding, materials and equipment, skills, time allocation, organizational backup. Were any important conditions seen as missing? Which were most missing?

3.4 Site dynamics during continuing cycles of transformation.

How was the innovative program transformed from its initially prescribed form when it encountered the school as a social organization? How were users' instructional and/or management styles altered through the use of the innovative program? How did the organizational context of the school (its rules, norms, working arrangements) change as a result of the introduction of the new program?

3.4.1 In what way did people redefine, reorganize, or reinvent the new program in order to use it successfully?

What parts of the new program were initially perceived as difficult to carry out or difficult to integrate into the context of the school? What implementation problems were encountered during the first few months of operation? Was there a settling down period? What problems were there after the program had been in operation for six months or so ? Which of these problems were anticipated or unanticipated? Which components of the new program were dropped, altered, or used intact? How did the initial assessment of the new program's benefits and weaknesses change over time? How well was the program working? How did people know this?

3.4.2 How did users' perceptions and practices change during the use of the new program?

Did users begin to think differently about the new program in general? Did they see the new program as part of a theory of learning or of instruction? How did users' regular practices change (sequencing activities, grouping pupils, using materials, patterns of communication with pupils and colleagues, keeping records)? What was the experience of using the new program during the first few months, and did that change after the first six months or so had passed? How did users initially feel about the new program, and what effects did these feelings have on implementing it? Did these emotions change over time?

What effects did the new program have on other aspects of users' practices and beliefs (self-image, perceptions of students, relations with colleagues and administration, treatment of other subject areas, stance toward innovative programs in general, use of time and energy in improving practices, etc.)?

3.4.3 How did implementation of the new program affect the organizational structure and climate of the school?

What impact did the new program have on the daily working arrangements, norms, and relationships within the school? Were there changes in power and influence in coalitions and informal social networks? Did people's priorities for investing time and energy in the school change? Was there more or less collaborativeness, tolerance of diversity, self-disclosure, or enthusiasm for new programs?

How did the new program affect administrative planning and monitoring? What effects did it have on staffing, scheduling, use of resources, communication with teaching staff? Did its implementation change relationships with external sources of expertise, with central office administrators, with community groups (PTA, school board, business associations, etc.) or individual parents? How did school administrators initially feel about the new program, and did that change over the first six months of implementation? Did implementation of the new program affect administrators' attitudes toward introducing other innovative programs? Initially, what were the major administrative concerns vis-a-vis the new program? How, if at all, did these concerns get addressed, satisfied, or negotiated?

3.5 New configurations, ultimate outcomes

What is the current "shape" of the innovation, and what part does it play in the ongoing life of the classroom and the institution? To what degree can it be considered "institutionalized"? What gains and losses (bad outcomes) do site people see? What results have occurred that were surprising or unexpected? What have been the side effects--changes in the institution as a result of the new program?

3.5.1 Currently, has the new program "settled down," or are parts of it still being altered or dropped to assimilate it to the classroom?

What does the practice look like in operation? Which parts are being, or may be, changed? What does the adapting/modifying process look like?

3.5.2. Currently, have users' customary operating practices (relevant to the innovation) settled down, or are they still evolving and changing?

Whad does "customary operating behavior" now look like? Which aspects are still being, or may be, changed? What "spin-off" changes in other classroom practices can be noted, or are being planned?

3.5.3. Currently, is the new program institutionalized in the classroom, or in the work of its other users?

Is the new program "built in," likely to continue, as users see it? Are there "objective" indicators, such as schedule, materials, specific plans, connection with colleagues?

3.5.4. Currently, what do users summatively think of the program's direct effects?

What are strengths and weaknesses of the program? What benefits or gains do people see (personally, and as a member of the organization)? Do users see "meta-level" changes (changes in capacity, skills, knowledge, etc.) beyond those associated with direct use of the innovation? What losses or bad outcomes? Were these gains and losses anticipated or unanticipated? Does the good outweigh the bad?

3.5.5. Currently, what do users judge to be the side effects of the new program?

How has implementation of the new program affected other aspects of users' classroom operation? What positive and negative side effects are there? Were these anticipated or unanticipated? Does the good outweigh the bad?

3.5.6 Currently, has the new program "settled down" in the administrative/institutional structure of the school, or are parts still being altered or dropped to make it fit better?

Which parts are being, or may be changed? What does the adapting/modifying process look like at the organizational level?

3.5.7. Currently, have administrative/institutional arrangements settled down, or are they still evolving and changing to fit the innovation?

What do the arrangements now look like? Which aspects are still being, or may be, changed? What "spin-off" changes in the organization can be noted, or are being planned?

3.5.8. Currently, is the innovation institutionalized in the school?

Is it "built in," as administrators see it? What "objective" indicators are present (ex: incorporation in the curriculum, budgeting, plans for continued in-service training or support, hiring of new staff, support by board, central office, community)?

3.5.9. Currently, what do administrators summatively think of the new program's effects upon the organization of the school?

What are strengths and weaknesses? What benefits and gains are claimed from an organizational viewpoint (ex: better classroom practice, staff capacity, morale, administrative efficiency, improved capability for other change projects)? Were these anticipated or unanticipated? What losses or bad outcomes are noted (ex: scheduling confusion, staff dissatisfaction with regular curriculum, lack of communication between user and non-user staff)? Does the good outweigh the bad?

3.6 Role of external and internal assistance

What kinds of assistance (technical, practical, psychological, administrative, political) efforts occurred during the adoption/implementation process? How is assistance organized, both formally and informally? These may have come from external agents (formal linking agents, friends/relations, people from other districts), laterally from peers, or from administrators.

3.6.1. Where were assisters and assistees located in the social structure of the school?

Assisters may be completely external to the school, be at the boundary, be in internal positions with high or low formal power, and have high or low prestige and credibility. The basic issue is: to whom do people go for help? Who offers help? How are both kinds of people sited in the school? What are the networks of relatedness when it comes to giving and receiving help?

An associated issue is the school-wide roles and norms encouraging and regulating the seeking and giving of assistance (re such matters as admitting failure, seeking help, giving help, collaborating) and their effects.

3.6.2. What were the general orientations or role perspectives of the assister, as seen by receivers during concrete events?

Assisters may be seen variously as content or process-oriented, as being "expert" or "facilitative," as coercive, rational or re-educative, as product-oriented or capacity-building.

3.6.3. What specific types of assistance efforts were made (and sought) during various stages of the improvement program?

These may be technical (awareness sessions, training, resource information); practical (demonstrations, visits, trouble-shooting advice); psychological (handholding, support); administrative (logistical details, coordination); or political (negotiating conflicts, buffering or protection from external pressure). Through what formats or procedures was assistance offered?

3.6.4. What were the effects, both positive and negative, of these specific assistance efforts?

Effects may be innovation-specific (problem resolution, encouragement, increased mastery, discouragement, failure), or seen at a meta-level (increased desire to use other innovations, more skillful utilization of assistance, increased confidence, feelings of "never again," etc.)

3.6.5. How did receivers evaluate the quality of assistance received?

Did they consider the assistance relevant, adequate, responsive to needs, sufficient, legitimate, useful?

3.6.6 In what ways did assistance efforts from various sources combine or relate to each other, combine from the user point of view?

Did external agents, peers and administrators work together, combine efforts, link--and if so, how? To what degree was assistance from various sources unconnected and not coordinated, loosely coupled?

A STUDY OF DISSEMINATION EFFORTS SUPPORTING SCHOOL IMPROVEMENT

October 1979

WHO WE ARE

We are a team of researchers interested in studying teachers' experience with educational innovation and school improvement efforts. Two of us are based at the Knowledge Transfer Institute in Washington, DC, and two of us are at the Center for Policy Research in New York City. Both organizations are non-profit, tax-exempt research corporations whose work is financed by foundation and government support.

A. Michael Huberman
Jo Ann Goldberg
KNOWLEDGE TRANSFER INSTITUTE
5010 Wisconsin Avenue, NW
Washington, DC 20016

202/686-3814

Matthew B. Miles
Beverly Loy Taylor
CENTER FOR POLICY RESEARCH
475 Riverside Drive
New York, NY 10027

212/870-3186

BACKGROUND OF OUR STUDY

As our letterhead shows, we are part of a larger study funded by the U.S. Office of Education to examine local school improvement efforts and the federal and state programs that support them. The larger study is looking at 165 randomly-chosen school districts in ten states across the country to determine how new programs are carried out and to learn what conditions help or hinder their use.

Our part of this study calls for us to select a dozen local school sites for an in-depth look at their experiences with using innovative programs. We want to learn about your school's immediate history and surroundings, what led to the decision to use this program, what happened as the school's new program started up and evolved, and any changes occurring in your educational philosophy and work styles.

OUR OBJECTIVE

Our research aims at understanding the realities of how new educational programs are used. As we shall be making policy recommendations based on insights derived from your school and others we will visit, we need to know what your experiences have been in order to make those recommendations concrete and appropriate. We are not an evaluation study.

Basically, we want to understand clearly from your perspective what the school was like before the new program was introduced, how the decision to use the program was made, what it was like to implement the program, and how educational philosophies and classroom practices were affected at the school.

The NETWORK, Inc., Andover, MA in collaboration with
Knowledge Transfer Institute, American University • The R&D Center on Teacher Education, University of Texas
The Center for the Study of Evaluation, UCLA • The Center for Policy Research, Inc., New York

HOW WE WORK

We would like to visit your school about once a month this school year, for a 1-2 day period, to attend meetings on innovation work, talk with teachers using the new program, talk with building and district administrators, visit classrooms of users, and talk to other school people. We also would like to collect related documents (reports, descriptions, meeting agendas), and might occasionally wish to tape some interviews or meetings (with permission).

Between visits, we would like to keep updated on events that we miss, and we suggest one or two phone calls a month to a couple of school people who can fill us in on what's happening at the school.

One of us will be the primary researcher at your school, although another team member might make an occasional visit. We expect our involvement with your school to extend from late fall until about the end of April, though this period might be shortened, depending on how much is going on at your school.

OUR GROUND RULES

Because we need your trust and cooperation, we guarantee that:

- We will not report to other school people what individuals have said to us.
- We guarantee school and individual anonymity in any reports we write.

WHAT WE'RE STUDYING, MORE SPECIFICALLY

It will help you and us if we're all clear on what we're interested in studying when we visit your school. We have six major topic areas, including:

1. The innovation itself.

   What's it supposed to do, for teachers and for students? How does it work, what materials are used, what demands does it make on you? What kinds of changes in the classroom or whole school did it require?

2. What was the school like before the new program came?

   How has your school reacted to other new programs in the past? What were the working arrangements and climate like? What were the school's district and community like? Why was *this* program chosen?

3. How was the decision to use this program made?

   Who was involved? How important was this program to school people? What did the plan for adopting this program look like?

4. What was it like during start-up and implementation?

   How was the new program altered to make it fit into the classroom or school? Did you change your perceptions or classroom practices through using the program? Were there any changes in the school in general as a result of using this program?

5. Is there life after implementation, or:

   Has the new program pretty much settled down by now, or is it still changing? How are you working with it, right now? What changes, good and bad, has the program led to in teachers, students, the school? Will the program continue, as a regular part of the school?

6. What kind of implementation help was there?

   What kind of assistance was offered? Who did you go to for help when you needed it? What did assisters do, specifically? How effective was that help in meeting your needs?

WHAT YOU MAY GAIN FROM PARTICIPATING IN OUR STUDY

We know implementing new programs is hard work. Whether you're in the midst of it or have been through it and are thinking of doing it again, we think, based on our prior work, that it's helpful to have the chance to talk about your experiences, to explore your reactions to and feelings about your work. We don't have advance explanations for your experiences, and we're aware that you can account for them in your adoption and implementation work better than we can. So we expect to listen more than to ask questions.

In addition to offering you the opportunity to reflect on your work, we will provide copies of our reports summarizing what we've learned about your site. These summaries may be useful in viewing yourself and your experience in the wider context of educational innovation and school improvement practices. We will be happy to meet with you to discuss our summaries, if you wish.

IF YOU HAVE QUESTIONS

If anything we have said is not clear, please feel free to raise questions when we visit your school, or to call us collect at our offices.

3/10/80

Appendix C

INTERVIEW SCHEDULE -- USERS

This includes face sheet data, event history, cycles of transformation, assistance (to be revised later), and outcomes. This guide should be treated as a sort of master checklist: information on all items should be gathered from key respondents. For others, many questions may be omitted/adapted. Where appropriate, NDN vs. IV-C wordings are given.

FACE SHEET INFORMATION

1. Name and job title.
2. Courses teaching; number of students working with, in all; and number of students using innovation with.
3. How long at this school, and this district; jobs held.
4. Previous jobs held ("What were you doing before you came here?")

    --Where
    --Include non-education jobs if salient

5. Personal data

    --Where grew up
    --High school and college location
    --Education level (master's, bachelor's) and special field(s)
    --Approximate age

6. Length of time using ________ (innov.).

PICK UP LATER:

7. What expecting to be doing in 2-3 years/forward plans.

    --Have a sense of being in a transitional period?

EVENT HISTORY

I'd like to ask you a series of questions about the early history--what happened before _____ was ever used with students.

1. Could you tell me what you know about how _____ got started in this school? (3.2.4)

   Probes

   --Get sequence from awareness to adoption

   --Get how adoption decision was made and by whom outside and within the school (3.2.3, 3.2.5)

   --Key people involved

   --Antagonists, gatekeepers, opinion leaders other than key people

   --Reasons given for adoption (3.2.6)

   -Public: Improvement of practice...solving educational problems...

   -Dig for private: Promotion...prestige...visibility...boredom...getting out of classroom...needed funds...

2. Could you tell me (a little more) about people outside the school who were influential in getting _____ into this school? (3.2.3, 3.2.5)

   FOR IV-C: "Getting the idea of _____ going, starting the concept..."

   Probes

   --District office people

   --Board of Education people

   --PTA and other community agencies

   --Local politicians

   --State diffusion networks or other state agencies

   --Assessment of whether program's origin (external/internal to building) played a key role? (3.2.5)

   --External events or situations (e.g., community relations with school) that might have influenced adoption...EC-DEM variables of community characteristics, politics, ethos, availability of funds. (3.2.3)

3. Could you tell me (a little more) about the school and why _____ got adopted here and not elsewhere? (3.2.2)

   FOR IV-C: "Got started here..."

   Prober

   --Pertinence of teachers' attitudes or practices

   --Pertinence of staff's previous experience with similar programs or practices

   --Pertinence of pupil population (SES, achievement levels)

   --Administrative support or enthusiasm

4. How did people at the school usually react to other new programs which were proposed? Has that changed with _____? (3.2.1)

Probes

--Always been a lot of introducing new programs in this school? District?

--How many introduced in the past three years? Of which type?

--How did they work out? Did people feel the time and effort were worth it?

5. Was there anything else going on at the time _____ got started that was important? (3.2.2, 3.2.3)

Probes

--Something which didn't look important at the time, but turned out to be?

6. How did you get involved? (3.2.4)

Probes

--Initial awareness (communicator and role of communicator)

--Chronology of own involvement up through adoption decision, noting dates, key events, persons

--Reasons for adopting (public and private)

-What was in it for you?

-What was in it for others?

--FOR IV-C: The decisions to go with a particular concept; to write the proposal; to proceed with the program after funding; to proceed in a particular site or with certain participants.

NOTE: If these questions show that the person was directly involved in planning/development of the innovation (as in IV-C programs), continue, but note directions for SKIPPING forward in Question 11.

7. When you first heard about _____, which features of it stood out for you? (3.1.2)

Probes

--Initial appeal, strengths of the program

--Initial doubts, reservations about weaknesses

--Same or different features for others in school (teachers and administrators)

8. Compared to the kinds of things that matter for you--what you spend most of your time and energy on--how much did this one really count, back then? (3.3.2)

Probes

--Some estimate, comparing _____ to other innovations user has tried or thought of trying

--How much did it count for other teachers? (3.2.6)

--How much did it count for the administrators? Might there have been sanctions for not adopting? (3.2.6)

--Extent of administrative support and commitment (3.3.2)

9. What a school is like usually makes a difference in deciding to get a new program started. What was this school like, before _____ entered the picture? (3.2.2) For example, would you say it was a place where people liked to work things out together, or did they prefer to solve problems pretty much on their own?

Probes

--Ways of doing things, methods

--How decisions made, and who involved

--General climate, feelings, attitudes

--"Do's and donts" (open/closed; innovative/traditional; distant/close; risk-taking/safety-minded; diverse/uniform; conflict/smoothing)

--Key relationships, cliques

10. And what was there about the district that might have made a difference in getting _____ started? (3.2.3)

Probes

--Traditional/conservative orientation

--Political climate

--Ethnic, social, economic composition

--Supportiveness/skepticism toward schools by community

--District/central office attitudes, set-up

--Economic needs

11. When you first heard about (or saw) _____, what did you think it might be like to use it? (3.1.3)

Probes

--Complex (many parts), or simple and straightforward

--Unclear (in objectives, methodology, sequencing), or clear

--Difficult to get on top of, or easy to get on top of

--Prescriptive and rigid, or flexible and manipulatable

NOTE: For people who were directly involved in planning/development of the innovation, SKIP forward here to Question 17, Cycles of Transformation, page 7.

12. Did you get any training or help with _____ before you actually started using it with students? IF YES... (3.3.4)

Did your view of _____ change any as a result of that?

Probes

--Adequacy of front-end training

--Changes in perception after seeing demonstrations, presentations, reading about it, talking with people, etc.

13. How well did parts of _____ seem to fit in your mind with the way you like to work in the classroom, the way you interact with the children, the things you do best? (3.2.7)

Probes

--Anything that fitted especially well?

--Any misfittings?

14. In order to do _____ the way you wanted to do it, what kinds of things did you think would have to change in the classroom as it was before you started? (3.1.4) What would you have to do or be that was different?

Probes

--Instrumental changes: Space
Materials
Scheduling; % time spent on other activities
Grouping
Working with other teachers
Evaluation/monitoring

--Attitudinal changes: Relationships with students
Perceived role as teacher

--How substantial or dramatic did you perceive these changes to be?

15. Let's think for a minute about the organizational set-up. What kinds of changes did you think might have to take place in the school (beyond the classroom), or maybe in the whole district, if _____ was going to work right? (3.1.5) I have some general headings to ask you about.

A. First, the general organizational set-up. What might have to be new, or what might have to be revised or changed, in terms of:

--Roles (doing different things, start or stop doing things)

--How roles connected, teaming, who works with whom

--Groups, meetings (new ones, revised ones)

--Budgeting, where the money goes

--General policies

--Use of space, physical facilities

--Ongoing inservice sessions

--Evaluation--of program, teachers, students

B. Next, general procedures. What might have to be new or revised in:

--Ways of doing things, methods

--Scheduling

--Extra time for planning

--How decisions get made, who or what can influence them

--Rules

--How and where people get help or assistance

C. And finally, people's feelings and reactions. What would have to change in:

--General climate, how it feels in the school, attitudes

--"Rules of the game," or "do's and donts," such as:

-Being open, honest vs. playing it close to the vest

-Trying new things vs staying with the familiar

-Taking risks vs. playing it safe

-Helping each other vs. self-reliance

-Being diverse and different vs. being uniform and standard

-Dealing with conflict vs. avoiding it

--Relationships--how certain people get along with each other (pairs, partners, key participants, etc.)

16. As you look back on it now, how well prepared do you think you and the other teachers, and the school in general, were to take on _____ and to do it well? (3.3.3, 3.3.4)

In which aspects were you and/or the school well prepared?

In which aspects were you and/or the school poorly prepared?

Probes

--Commitment

--Understanding

--Front-end training, requisite skills

--Provisions for debugging (time, assistance)

--Administrative backup and support

--Existence of a plan (degree of precision, elaboration of that plan)

THANK YOU!

CYCLES OF TRANSFORMATION: The Planning Period

This section will be used only with people who were actively involved in the planning/development of the innovation, and is most relevant to IV-C programs. But, some NDN's (e.g., Perry) have such a period too. The planning period is defined as what happened AFTER funding was received and BEFORE implementation with students.

In some cases, it may develop that the great majority of planning actually took place during proposal writing, with few modifications in the period between funding and implementation with students. In that case, use the following questions with appropriate changes.

For a user who was NOT in on the planning, SKIP forward to Question 32 in the pre-implementation period, page 11.

17. I'm interested in the history of the planning period--when the _____ program was being developed/put together/refined. What I'll do is ask you some general questions to get you started. You have to remember what happened in your own way. I'll have specific questions from time to time as we go along.

    A. My understanding from you is that planning began in _____. Right?

    Could you think back to that time, get back to it in your mind? What was going on then, in the school, at home, or somewhere else? I'm just trying to bring your memory back to that point in time.

    B. What were you thinking and feeling then?

    Probes

    --Where were you located?

    --Who were you talking with?

    --What did they and you say?

    C. Who all was involved in planning _____? What were their jobs then? (3.3.1)

18. In order to do _____ right, what kinds of things did you think would have to change in teachers' classrooms as they were before they started using _____? (3.1.4) What would they probably have to do or be that was different?

    Probes

    --Instrumental changes: Space
    Materials
    Scheduling; % time spent on other activities
    Grouping
    Working with other teachers
    Evaluation/monitoring

    --Attitudinal changes: Relationships with students
    Perceived roles as teachers

    --How substantial or dramatic would these changes be?

19. How well did you think parts of _____ would fit with the way most teachers liked to work in the classroom, interact with children, do what they do best? (3.2.7)

Probes

--Anything that fitted especially well?

--Any misfittings?

20. Let's think for a minute about the organizational set-up. What kinds of changes did you think might have to take place in the school (beyond the classroom), or maybe in the whole district, if _____ was going to work right? (3.1.5) I have some general headings to ask you about.

A. First, the general organizational set-up. What might have to be new, or what might have to be revised or changed, in terms of:

--Roles (doing different things, start or stop doing things?

--How roles connected, teaming, who works with whom

--Groups, meetings (new ones, revised ones)

--Budgeting, where the money goes

--General policies

--Use of space, physical facilities

--Ongoing inservice sessions

--Evaluation-of program, teachers, students

B. Next, general procedures. What might have to be new or revised in:

--Ways of doing things, methods

--Scheduling

--Extra time for planning

--How decisions get made, who or what can influence them

--Rules

--How and where people get help or assistance

C. And finally, people's feelings and reactions. What would have to change in:

--General climate, how it feels in the school, attitudes

--"Rules of the game," or "do's and donts," such as:

-Being open, honest vs. playing it close to the vest

-Trying new things vs. staying with the familiar

-Taking risks vs. playing it safe

-Helping each other vs. self-reliance

-Being diverse and different vs. being uniform and standard

-Dealing with conflict vs. avoiding it

--Relationships--how certain people get along with each other (pairs, partners, key participants, etc.)

21. That gives an overview of how you were thinking at the start of planning. Now can you give me an idea of what you did during the first week or two of planning?

22. Can you give me an idea of how planning went from then on--a chronological flow? What happened next, then next, and so on?

(keep this slowed down)

23. What would you say were the main problems you ran into during the planning? How did these problems get solved?

24. How did _____ change during the planning period? (3.4.1)

Probes

--Things dropped

--Things added, created

--Things revised

25. And during the planning period, what changes took place in the organization of the school, or the district? (3.4.3)

Probes

--Structure (roles, connections, groups, budget, policy, space, facilities, inservice, evaluation)

--Procedures, ways of doing things (scheduling, decision making, rules, help, planning time)

--Attitudes, feelings (climate, do's and donts, relationships)

26. During the whole planning process, who were the people who gave help or assistance? (Get names, jobs) (3.6.1) In or out of the district.

Probes

--Who did you most often go to? For what? Why?

--Anyone supposed to help, but didn't so much?

--How were helpers connected with each other, or not? (3.6.6)

27. I'd like to focus on a few of the people you've mentioned. Take _______, for example. What kind of help do you think that person was trying to give? (3.6.2)

Probe

--What did they do, specifically? (3.6.3)

REPEAT for others.

28. A lot of times people want to help, but they may not succeed. How effective was the help these different people gave? (3.6.4)

Probes

--What would you say they accomplished? (3.6.3)

--Good and bad results?

29. By the end of the planning, can you remember if there was a plan for just how _____ would be implemented? (3.3.3)

Probes:

--Procedures

--Timetable

--Trouble-shooting

--Support

--Training

--Monitoring

30. Did you think the situation was right, back then, for carrying out the implementation plan? (3.3.3)

Probe

--Any key factors missing?

- -Commitment
- -Understanding
- -Training, assistance
- -Materials, equipment
- -Time
- -Administrative backup and support

31. Anything else that would help me understand how the planning period went?

THANK YOU!

CYCLES OF TRANSFORMATION: Pre-implementation

What I'd like to do now is to go through your experience with _____--what you were doing and thinking and feeling while you were working with it BEFORE you started using it with students.

I really want to find out what your experience with _____ has been without trying to put it into any framework. I do have some questions I'll need answers to, and I'll be interjecting them now and then. But, feel free to float a little with your answers.

32. Let's go back first to the time just before you started using _____. Say, a week or so before you were going to use it with students.

    A. When was that? (Year, month)

    Do you remember what that was like? What was going on at school--or maybe at home or elsewhere--that week? Where were you located? Were you working alone or with other people? I'm just trying to bring your memory back to that point in time.

    B. How were you feeling about starting in? What concerns did you have?

    Probes

    --Looking forward/feeling neutral/feeling apprehensive

    --General anxiety about starting something new

    --Thinking about evaluation by others

    --Wondering about children's reactions

    --Considering dynamics in the school or central office

    --Feeling unsure that you'd be good at this

    --Feeling not ready

33. Probably you have a certain idea of how _____ looks to you now, but keep thinking back to how it first looked to you then, just before students came. How did it seem to you then? (3.1.2, 3.1.3)

    Probes

    --Clearly connected, differentiated vs. unconnected, confusing

    --Clear how to start vs. awesome, difficult

    --Complex (many parts) vs. simple and straightforward

    --Prescriptive and rigid vs. flexible and manipulatable

34. What parts or aspects seemed ready to use, things you thought would work out OK? (3.4.1)

35. What parts or aspects seemed not worked out, not ready for use? (3.4.1)

36. Could you describe what you actually did during that week or so before you started using _____ with students?

Probes

--Reading

--Preparing materials

--Planning

--Talking (with whom, about what)

--Training

37. What would you say were the main problems that you ran into during that week?

Probes

--What kind?

--How solved?

38. During that week, did anyone give you help or assistance? It might have been other teachers, the principal, teacher aides, central office people, outside consultants, people in your family, friends...

A. Who (inside or outside the district)? (3.6.1)

Probes

--Anyone supposed to help, but didn't?

--Any help you wanted and didn't get?

--Any "help" you got but didn't want?

--Anyone not designated as a helper, but who actually provided help?

--Did helpers coordinate with each other? (3.6.6)

B. What did they do, specifically? (3.6.2, 3.6.3)

Probes

--What kind of approach?

--On what tasks or problems?

C. How effective would you say their help was? (3.6.4, 3.6.5)

Probes

--What did they accomplish?

--What good and bad results?

39. What would you say about materials (handbooks, forms, articles, manuals) and how they helped you? Which ones, and how?

40. Did you make any changes in the standard format for the program before you started using it with students? (3.4.1) What kind of changes with things you thought might not work, things you didn't like, things you couldn't do in this school?

Probes

--Things dropped

--Things added, created

--Things revised

THANK YOU!

CYCLES OF TRANSFORMATION: Initial Use

Now could you think about the first week or ten days when you began to use _____ with students. Do you remember what it was like? What comes into your mind?

41. What was the first day like? (3.4.1)

42. And how did things evolve over the next week or ten days? (3.4.1)

Probes

--What went well?

--What were the bumpy parts?

--What was surprising?

43. If you had to give a name or a phrase to characterize those first days, what would it be? Why?

NOW I'D LIKE TO ASK YOU SOME OF THE SAME QUESTIONS I DID BEFORE:

44. During this "________" period, what concerns or worries did you have? (3.4.1)

Probes

--Ego-centered (can't cope, etc.)

--Instrumental (not working right, etc.)

--Comparative (worried about others or administrative views)

45. How did the _____ program look to you during that period? (3.4.2)

Probes

--Any changes from the way you saw it before?

--Did you see it the same or differently from other teachers?

--Did you see it the same or differently from people who had helped before startup, people like _________?
(name)

46. What were you actually doing during that "________" period?

Probes

--Main activities being carried out re the innovation (e.g., planning, preparing materials, day-to-day teaching, keeping order, recordkeeping, relating to students, attending meetings, etc.)

--Which parts spent most time on, and why?

--Which parts or aspects spent least time on, and why?

47. How did your previous practice or teaching habits fit with the way you were using _____? (3.4.2)

Probes

--Did they help in any way?

--Did they get in the way, or hinder you?

48. During that "________" period, did anyone give you help or assistance?

A. Who (inside or outside the district)? (3.6.1)

Probes

--Anyone supposed to help, but didn't?

--Any help you wanted and didn't get?

--Any "help" you got but didn't want?

--Anyone not designated as a helper, but who actually provided help?

--Did helpers coordinate with each other? (3.6.6)

B. What did they do, specifically? (3.6.2, 3.6.3)

Probes

--What kind of approach?

--On what tasks or problems?

C. How effective would you say their help was? (3.6.4, 3.6.5)

Probes

--What did they accomplish?

--What good and bad results?

49. What would you say about materials (handbooks, forms, articles, manuals) and how they helped you? Which ones, and how?

50. Did you make any changes in the standard format for the program? (3.4.1)

Probes

--Drop parts? Which?

--Add parts? What?

--Revise parts? How?

--Combine parts? Which?

--Select out, or choose certain parts to use? Which?

51. Did any changes occur in the organization of the school or district during that period? (3.4.3)

Probes

--Structure, set-up (roles, connections, groups, budget, policy, space, facilities, inservice, evaluation)

--Procedures, ways of doing things (scheduling, decision making, rules, help, planning time)

--Feelings, climate (attitudes, do's and donts, relationships)

THANK YOU!

CYCLES OF TRANSFORMATION: Later Use

I'd like to talk about what happened over the next weeks and months. Following the "________" phase, did things go on the same way, or were there some changes?

52. When did those changes come, and what were they like? (3.4.1)

    Probes

    --Did they have anything in common?

    --What caused them? Why did they happen?

    --What differences did they make in what you were doing, thinking, feeling?

53. Could you try dividing up the next months into periods that have different names? What would those names be, and what do the times look (feel) like?

    (Ask more about the phases to understand their meaning. Get precise times, if possible. Then go back and ask following questions about the phases that constitute use prior to what sounds like reasonably coordinated practice, or "settling down." If respondent gives very detailed differentiation of phases, you probably should do some lumping. The intent is not to prejudge the "stepwise and chunking" and "initial coordination" stages, but to find out how respondent views the pre-stabilized work and transformations.)

NOW I'D LIKE TO ASK YOU SOME OF THE SAME QUESTIONS I DID BEFORE:

54. During these next phases ("________, ________"), how did things evolve in the _____ program? (3.4.1)

    Probes

    --What went well

    --What were bumpy parts

    --What was surprising

    --What were problems encountered

55. During these "________, ________" periods, what concerns or worries did you have? (3.4.1)

    Probes

    --Ego-centered (can't cope, etc.)

    --Instrumental (not working right, etc.)

    --Comparative (worried about others or administrative views)

56. How did the _____ program look to you during those periods? (3.4.2)

Probes

--Any changes from the way you saw it before?

--Did you see it the same or differently from other teachers?

--Did you see it the same or differently from people who had helped before startup, such as ________? (name)

--Did things make more sense, seem to hang together more?

57. What were you actually doing during those "________" periods? (3.4.1)

Probes

--Main activities being carried out re the innovation (e.g., planning, preparing materials, day-to-day teaching, keeping order, recordkeeping, relating to students, attending meetings, etc.)

--Learning to use _____ better

--Coping with its demands

--Experimenting with different approaches, materials

58. How did your previous practice or teaching habits fit with the way you were using _____? (3.4.2)

Probes

--Did they help in any way?

--Did they get in the way, or hinder you?

59. How well do you feel you were working with _____ during the "________" phases? (3.4.2)

Probes

--What parts were under control?

--Which parts felt shaky, and why?

--What were new rough spots?

60. During those "________" periods, did anyone give you help or assistance?

A. Who (inside or outside the district)? (3.6.1)

Probes

--Anyone supposed to help, but didn't?

--Any help you wanted and didn't get?

--Any "help" you got but didn't want?

--Anyone not designated as a helper, but who actually provided help?

--Did helpers coordinate with each other? (3.6.6)

B. What did they do, specifically? (3.6.2, 3.6.3)

Probes

--What kind of approach?

--On what tasks or problems?

C. How effective would you say their help was? (3.6.4, 3.6.5)

Probes

--What did they accomplish?

--What good and bad results?

61. What would you say about materials (handbooks, forms, articles, manuals) and how they helped you? Which ones, and how?

62. Did you make any changes in the standard format for the program? (3.4.1)

Probes

--Drop parts? Which?

--Add parts? What?

--Revise parts? How?

--Combine parts? Which?

--Select out, or choose certain parts for use? Which?

63. Did any changes occur in the organization of the school or district during that period? (3.4.3)

Probes

--Structure, set-up (roles, connections, groups, budget, policy, space, facilities, inservice, evaluation)

--Procedures, ways of doing things (scheduling, decision making, rules, help, planning time)

--Feelings, climate (attitudes, do's and donts, relationships)

THANK YOU!

CYCLES OF TRANSFORMATION: Stabilization and Refinement

I'd like to talk now about how it's been since _____ has settled down reasonably well for you. I mean the phases you called "________, ________, and ________."

NOTE NOTE NOTE: If respondent hasn't reached a "settled down" phase, SKIP to page 20, Question 75, New Configurations and Outcomes. But use judgment: if later phases of use feel different from ones just discussed, then proceed with questions here, revising out the "settled down" wordings.

64. Since _____ has settled down fairly well for you, have there been any further changes and refinements, or have things gone on pretty much in the same way? (3.4.1)

Probes

--Did the changes have anything in common?

--What caused the changes, why did they happen?

--What differences did they make in what you were doing, thinking, feeling?

65. During this time, how did things evolve? (3.4.1)

Probes

--What went well

--What were the bumpy parts

--What was surprising

--What were problems encountered

--Ever have days where you felt completely on top of _____? How come?

66. During this time, since things more or less settled down, what worries or concerns did you have? (3.4.1)

Probes

--Ego-centered (adequacy in doing task)

--Instrumental (management, organization, planning ahead, concern with outcomes)

--Comparative (how others doing, how administration feels)

--Spread, extension (using parts elsewhere, teaching others, recombining, refining)

67. How did _____ look to you during this period? (3.4.2)

Probes

--Any changes from the way you saw it before?

--Did you see it the same or differently from other teachers?

--Did you see it the same or differently from people who had helped before startup?

--Did things make more sense, seem to hang together more?

--Did the principles and theory behind the _____ program seem clearer?

68. What were you actually doing during this "________, ________" period? (3.4.1)

Probes

--Main activities being carried out re the innovation (e.g., planning, preparing materials, day-to-day teaching, keeping order, recordkeeping, relating to students, attending meetings, etc.)

--Which parts spent most time on, and why?

--Which parts or aspects spent least time on, and why?

--Experimenting with different approaches and materials, combining things?

69. How did your previous practice or teaching habits fit with the way you were using _____? (3.4.2)

Probes

--Did they help in any way?

--Did they get in the way, or hinder you?

70. How well do you feel you were working with _____ during these "________" phases? (3.4.2)

Probes

--What parts were under control?

--Which parts felt shaky, and why?

--What were new rough spots?

71. During this time, did anyone give you help or assistance?

A. Who (inside or outside the district)? (3.6.1)

Probes

--Anyone supposed to help, but didn't?

--Any help you wanted and didn't get?

--Any "help" you got but didn't want?

--Anyone not designated as a helper, but who actually provided help?

--Did helpers coordinate with each other? (3.6.6)

B. What did they do, specifically? (3.6.2, 3.6.3)

Probes

--What kind of approach?

--On what tasks or problems?

C. How effective would you say their help was? (3.6.4, 3.6.5)

Probes

--What did they accomplish?

--What good and bad results?

72. What would you say about materials (handbooks, forms, articles, manuals) and how they helped you? Which ones, and how?

73. Did you make any changes in the standard format for the program during that period? (3.4.1)

Probes

--Drop parts? Which?

--Add parts? What?

--Revise parts? How?

--Combine parts? Which?

--Select out, or choose certain parts for use? Which?

74. Did any changes occur in the organization of the school or district during that period? (3.4.3)

Probes

--Structure, set-up (roles, connections, groups, budget, policy, space, facilities, inservice, evaluation)

--Procedures, ways of doing things (scheduling, decision making, rules, help, planning time)

--Feelings, climate (attitudes, do's and donts, relationships)

THANK YOU!

NEW CONFIGURATIONS AND OUTCOMES

Now I have some summary questions.

Earlier (see Question 14 for new users or Question 18 for planners) you mentioned the kinds of changes you thought would have to take place in your own classroom work (or others' classroom work) if _____ were to be done right.

(Review these changes.)

75. Did these changes actually occur? (3.4.2)

    A. Of those that did, which were hard to make, and why?

    B. Which were easy to make, and why?

    C. Of those that didn't happen, why do you think that was?

    D. Did any other changes in classroom work happen that you didn't expect? What, and why?

Also, you suggested some changes that might have to occur in the school or the district organization (see Question 15 for new users, Question 20 for planners) if _____ were to be done right.

Let's go over these.

76. Did these changes actually occur? (3.4.3)

    A. Of those that did, which were hard to make, and why?

    B. Which were easy to make, and why?

    C. Of those that didn't happen, why do you think not?

    D. Did any other changes in the school or district organization happen that you didn't expect? What, and why?

77. As you moved through your experience with _____, would you say that it changed the way you think about yourself and your work in any way? (3.4.2)

Probes

--What focused on, attended to

--What works with kids

--Kids' motivations, learning styles

--Rewards from teaching

--Value of assistance

--Working with colleagues

--Effects of working on new programs

--View of oneself, self-confidence

--Philosophy or concept of education

78. Could you give me a brief summary of how _____ is set up in your own work right now? Maybe I could help by summarizing how I understand that you're using it. Then you can correct me and add to it. (3.5.1) Mention:

--Which components in use

--Kids, times, places

--Customary operating behavior of user

79. Do you expect to make any further changes in how it's set up? (3.5.2)

Probes

--Drop parts? Which?

--Add parts? What?

--Revise parts? How?

--Combine parts? Which?

--Select out, or choose certain parts for use? Which?

80. And how is the program set up administratively in the school? (3.5.6) Again, I'll summarize what I understand, and you correct me. Mention:

--Voluntary/mandated

--Which users

--Who's responsible for what

--Organizational/administrative components in place

81. Do you think the administrative set-up will change any further? (3.5.7)

Probes

--Drop parts? Which?

--Add parts? What?

--Revise parts? How?

--Combine parts? Which?

--Select out, or choose certain parts for use? Which?

82. Do you think it's likely that you'll continue to use _____ next year, or longer? (3.5.3)

Probes

--Specific plans, intentions

--Commitment to materials

--Forward scheduling

--Connection with colleagues

83. And do you think that _____ will continue to be used in this school or district by others next year, or longer? (3.5.3, 3.5.8)

Probes

--Will be dropped

--Will be cut back, reduced

--Will be kept about the same

--Will be expanded, extended

--Dissemination or training for other districts

84. How much would you say _____ is "built in" to the district? (3.5.8)

Probes

--Budget allocations; local rather than soft money funds

--Jobs filled

--Standard operating procedures

--Mandating

--Supporting policy

--Equipment or materials orders

--Special coordinators

--Future assistance set up, training

--Promotion or rewards to users

--Decision making, governance set-up

--Inclusion in regular curriculum

85. I'm interested in your summary reactions to _____, the goods along with the bads. (3.5.4)

Probes

--What appeals to you, what are its strengths

--What doubts or reservations do you now have about it

86. The experience of having a program like _____ can accomplish many different kinds of things--for kids, teachers, administrators, the school, the district, the community.

Some of these benefits are specific and focused. Others are more general and over-arching. Some are obvious, while others are behind the scenes.

What do you think _____ has done here?

Probes

--Direct effects (immediate, focused, program-purposive) (3.5.4, 3.5.9)

--Over-arching effects (widespread, capacity, more general knowledge) (3.5.4, 3.5.9)

--Private, less obvious effects (promotion, prestige, getting out of the classroom (3.5.4)

--Spin-off effects (not "directly" related to program, whether anticipated or not) (3.5.5)

--Positive or negative effects (3.5.4, 3.5.5, 3.5.9)

DO NOT PRESS ON LATTER TWO PROBES--NOTE THAT FOLLOWING QUESTIONS EXIST:

87. Sometimes programs like _____ have side effects or "spin-offs." They cause things to happen which are a bit unrelated to the main purpose, and often are unexpected. What's happened like that? (3.5.5)

88. Most new programs have negative effects of one kind or another. What have the negative effects of _____ been, in your opinion? (3.5.4, 3.5.5, 3.5.9)

89. Do you think of anything else that _____ has done, good or bad, expected or unexpected? (3.5.4, 3.5.5, 3.5.9)

ASK FOR RESPONDENT'S CAREER PLANS OR FUTURE SCENARIO FOR NEXT 2-3 YEARS, IF NOT VOLUNTEERED ALREADY (See Question 7, Face Sheet Information).

THANK YOU!

Appendix D

Data collection effort and methods, by sites

SITE	# SITE VISITS	TOTAL DAYS ON SITE	# PHONE CONTACTS		# FORMAL, INFORMAL INTERVIEWS	NUMBER OBSERVATIONS	NUMBER DOCUMENTS COLLECTED	NUMBER PAGES TRANSCRIBED FIELD NOTES
			INTER-VIEWS	UPDAT-ING				
ASTORIA	7	4½	8	9	20	3	5	112
BANESTOWN	4	9		6	47	7	8	408*
BURTON	3	6		3	31	8	20	148
CALSTON	3	7	3	5	16	2	2	134
CARSON	3	8		15	70	17	81	364
DUN HOLLOW	3	6		8	37	6	20	170
LIDO	3	5		2	22	5	13	92
MASEPA	3	9		7	46	10	6	370
PERRY-PARKDALE	3	7		5	60	11	49	301
PLUMMET	4	11	1	6	24	8	22	231
PROVILLE	4	8	1	5	28	0	10	158
TINDALE	4	9		8	49	8	23	225

* Combined notes of two researchers.

Appendix E

SENSITIZING CODES
Revised 6 March 1980

INNOVATION PROPERTIES	**IP**	**3.1**
IP: OBJECTIVES	IP-OBJ	3.1.1
IP: OUTCOMES CLAIMED	IP-OC	3.1.1
IP: ORGANIZATION	IP-ORG/DD, LS	3.1.1
IP: IMPLIED CHANGES - CLASSROOM	IP-CH/CL	3.1.4
IP: IMPLIED CHANGES - ORGANIZATION	IP-CH/ORG	3.1.5
IP: USER SALIENCE	IP-SALIENCE	3.1.2
IP: (INITIAL) USER ASSESSMENT	IP-SIZUP/PRE, DUR	3.1.3, 3.4, 3.5
IP: PROGRAM DEVELOPMENT (IV-C)	IP-DEV	3.1.1, 3.3.3, 3.3.4
EXTERNAL CONTEXT	**EC (PRE) (DUR)**	**3.2, 3.3, 3.4**
EC: DEMOGRAPHICS	EC-DEM	
In county - school personnel	ECCO-DEM	3.2.3, 3.3, 3.4
Out county, non-school personnel	ECEXT-DEM	3.2.3, 3.3, 3.4
EC: ENDORSEMENT	EC-END	3.2.3, 3.3, 3.4
In county - school personnel	ECCO-END	3.2.3, 3.3, 3.4
Out county, non-school personnel	ECEXT-END	3.2.3, 3.3, 3.4
EC: CLIMATE	EC-CLIM	3.2.3, 3.3, 3.4
In county - school personnel	ECCO-CLIM	3.2.3, 3.3, 3.4
Out county, non-school personnel	ECEXT-CLIM	3.2.3, 3.3, 3.4
INTERNAL CONTEXT	**IC (PRE) (DUR)**	**3.2, 3.3, 3.4**
IC: CHARACTERISTICS	IC-CHAR	3.2.2, 3.4, 3.5
IC: NORMS & AUTHORITY	IC-NORM	3.2.2, 3.4.3, 3.5
IC: INNOVATION HISTORY	IC-HIST	3.2.1
IC: ORGANIZATION PROCEDURES	IC-PROC	3.1.1, 3.2.4, 3.3, 3.4
IC: INNOVATION-ORGANIZATION CONGRUENCE	IC-FIT	3.2.2
ADOPTION PROCESS	**AP**	**3.2, 3.3**
AP: EVENT CHRONOLOGY - OFFICIAL VERSION	AP-CHRON/PUB	3.2.4, 3.3.1
AP: EVENT CHRONOLOGY - SUBTERRANEAN	AP-CHRON/PRIV	3.2.4, 3.3.1
AP: INSIDE/OUTSIDE	AP-IN/OUT	3.2.5
AP: CENTRALITY	AP-CENT	3.2.2
AP: MOTIVES	AP-MOT	3.2.6
AP: USER FIT	AP-FIT	3.2.7
AP: PLAN	AP-PLAN	3.3.3
AP: READINESS	AP-REDI	3.3.4, 3.2.1
AP: CRITICAL EVENTS	AP-CRIT	3.3.1
SITE DYNAMICS AND TRANSFORMATIONS	**TR**	**3.4**
TR: EVENT CHRONOLOGY - OFFICIAL VERSION	TR-CHRON/PUB	3.4.1, 3.4.2, 3.4.3
TR: EVENT CHRONOLOGY - SUBTERRANEAN	TR-CHRON/PRIV	3.4.1, 3.4.2, 3.4.3
TR: INITIAL USER EXPERIENCE	TR-START	3.4.1, 3.4.2, 3.4.3
TR: CHANGES IN INNOVATION	TR-INMOD	3.4.1
TR: EFFECTS ON ORGANIZATIONAL PRACTICES	TR-ORG/PRAC	3.4.3
TR: EFFECTS ON ORGANIZATIONAL CLIMATE	TR-ORG/CLIM	3.4.3
TR: EFFECTS ON CLASSROOM PRACTICE	TR-CLASS	3.4.2
TR: EFFECTS ON USER CONSTRUCTS	TR-HEAD	3.4.2, 3.4.3
TR: IMPLEMENTATION PROBLEMS	TR-PROBS	3.4.1
TR: CRITICAL EVENTS	TR-CRIT	3.4.1, 3.4.2, 3.4.3
TR: EXTERNAL INTERVENTIONS	TR-EXT	3.4.3
TR: EXPLANATIONS FOR TRANSFORMATIONS	TR-SIZUP	3.4.1, 3.4.2, 3.4.3
TR: PROGRAM PROBLEM SOLVING	TR-PLAN	3.4.1, 3.4.2, 3.4.3

NEW CONFIGURATIONS & ULTIMATE OUTCOMES	**NCO**	**3.5**
NCO: STABILIZATION OF INNOVATION - CLASSROOM	NCO-INNOSTAB/CLASS	3.5.1
NCO: STABILIZATION OF USER BEHAVIOR	NCO-STAB/USER	3.5.2
NCO: USER FIRST-LEVEL OUTCOMES	NCO-USER 1OC	3.5.4
Positive and negative	NCO-USER 1OC/+,-	
Anticipated and unanticipated	NCO-USER 1OC/A,U	
Combinations (when appropriate)	NCO-USER 1OC/A+, A- U+, U-	
NCO: USER META OUTCOMES	NCO-USER META	3.5.4
Positive and negative	NCO-USER META OC/+,-	
Anticipated and unanticipated	NCO-USER META OC/A,U	
Combinations (when appropriate)	NCO-USER META OC/A+, A- U+, U-	
NCO: USER SPINOFFS AND SIDE EFFECTS	NCO-USER SIDE	3.5.5 (3.5.2)
Positive and negative	NCO-USER SIDE OC/+,-	
Anticipated and unanticipated	NCO-USER SIDE OC/A,U	
Combinations (when appropriate)	NCO-USER SIDE OC/A+, A- U+, U-	
NCO: CLASSROOM INSTITUTIONALIZATION	NCO-INST/CLASS	3.5.5
NCO: STABILIZATION OF INNOVATION - ORGANIZATION	NCO-INNOSTAB/ORG	3.5.6
NCO: STABILIZATION OF ORGANIZATIONAL BEHAVIOR	NCO-STAB/ORG	3.5.7
NCO: ORGANIZATIONAL INSTITUTIONALIZATION	NCO-INST/ORG	3.5.8
NCO: ORGANIZATIONAL FIRST-LEVEL OUTCOMES	NCO-ORG 1OC	3.5.9
Positive and negative	NCO-ORG 1OC/+,-	
Anticipated and unanticipated	NCO-ORG 1OC/A,U	
Combinations (when appropriate)	NCO-ORG 1OC/A+, A- U+, U-	
NCO: ORGANIZATIONAL META OUTCOMES	NCO-ORG META	3.5.9
Positive and negative	NCO-ORG META OC/+,-	
Anticipated and unanticipated	NCO-ORG META OC/A,U	
Combinations (when appropriate)	NCO-ORG META OC/A+, A- U+, U-	
NCO: ORGANIZATIONAL SPINOFFS AND SIDE EFFECTS	NCO-ORG SIDE	3.5.9 (3.5.7)
Positive and negative	NCO-ORG SIDE OC/+,-	
Anticipated and unanticipated	NCO-ORG SIDE OC/A,U	
Combinations (when appropriate)	NCO-ORG SIDE OC/A+, A- U+, U-	
NCO: INSTITUTIONAL EXPANSION	NCO-INNOGRO/ORG	3.5.8
NCO: ORGANIZATIONAL REDUCTION	NCO-INNODWIN/ORG	3.5.8
EXTERNAL AND INTERNAL ASSISTANCE (SEPARATE CODES FOR EXTERNAL, PEER, ADMINISTRATIVE)		
ASS: LOCATION	ASS-LOC	3.6.1
ASS: RULES, NORMS	ASS-RULE	3.6.1
ASS: ORIENTATION	ASS-ORI	3.6.2
ASS: TYPE	ASS-TYPE	3.6.3
ASS: EFFECTS	ASS-EFF	3.6.4
ASS: ASSESSMENT BY RECIPIENTS	ASS-ASS	3.6.5
ASS: LINKAGE	ASS-LINK	3.6.6
EMERGING CAUSAL LINKS	**CL**	
CL: NETWORKS	CL-NET	N.A.
CL: RULES	CL-RULE	N.A.
CL: RECURRENT PATTERNS	CL-PATT	N.A.
Within site	CL-PATT/LS	N.A.
Intersite	CL-PATT/OS	N.A.
CL: EXPLANATORY CLUSTER (researcher)	CL-EXPL	N.A.
(respondent)	SITECL-EXPL	N.A.
QUERIES	**QU**	
QU: SURPRISES	QU-!	N.A.
QU: PUZZLES	QU-Q	N.A.

E-1

BEST COPY AVAILABLE

DESSI
Ethnography
Component

OPERATIONAL DEFINITIONS OF SENSITIZING CODES

Revised 6 March 1980

INNOVATION PROPERTIES - IP

OBJECTIVES: IP-OBJ	Goals, purposes, problems addressed as defined by developer or in project literature.
OUTCOMES CLAIMED: IP-OC	Changes, gains or other benefits to pupils, teachers, staff or school at large as claimed by developer or in project literature.
ORGANIZATION: IP-ORG/DD, LD	Details on materials, staffing, space utilization, scheduling, grouping of pupils, pedagogical approach or instructional theory as defined by developer or in project literature (D/D) or as locally designed (LD).
IMPLIED CHANGES - CLASSROOM: IP-CH/CL	Local site perceptions of changes and magnitude of these changes from existing conditions if new practice or program were implemented as "officially" described. This includes: (a) changes in classroom organization (see IP - Organization for components), and (b) changes in attitudes, relationships, operational philosophy.
IMPLIED CHANGES - ORGANIZATION: IP-CH/ORG	Local site perceptions of changes and magnitude of these changes from existing conditions if new practice or program were implemented as "officially" described. This includes: (a) changes in administrative arrangements, also including budgeting, authority, planning and monitoring, and (b) changes in relationships, relative power or privilege, institutional "climate" or press, both internally and in relation to key external persons, officials, groups, agencies.
USER SALIENCE: IP-SALIENCE	Aspects of the new practice or program seen as critical, controversial, meaningful by teachers, administrators and support staff; indications of consensus or divergence on these aspects.
USER ASSESSMENT: IP-SIZUP/PRE,DUR	User and administrator assessment of implementation facility or difficulty, including: (a) complexity, clarity, facility of objectives or procedures; (b) relative latitude/prescriptiveness; and (c) amount of necessary assistance at front-end and/or ongoing. This includes judgments of merit/demerit of innovation.
PROGRAM DEVELOPMENT (IV-C): IP-DEV	Events and activities relating to the planning, developing of the program after funding is received, including curriculum development, staffing, organizational arrangements.

EXTERNAL CONTEXT - EC

DEMOGRAPHICS: EC-DEM	Characteristics of the community and district which are identified by informants as influencing adoption and implementation, including SES and ethnic composition, community wealth, rural/urban/suburban character.
ENDORSEMENT: EC-END	Pre- and post-adoption stance toward or assessment made of the practice or program by school board, district office, PTA, and other key community persons and agencies (e.g., local newspaper).
CLIMATE: EC-CLIM	Attitudes toward and relations with local school on the part of key community figures and agencies, including central office, which are identified by informants as influencing adoption and implementation, including: (a) openness of experimentation/conservatism, (b) quality and intensity of school-community relations, and (c) indices of general community support for school operations.

INTERNAL CONTEXT - IC

CHARACTERISTICS: IC-CHAR	Descriptive features of the school identified by respondents as influencing adoption and implementation, including: (a) prior experience and training of staff, (b) dominant teaching styles and types of classroom management, and (c) pupil, SES and ethnic composition, achievement levels, prior experience with similar innovations.
NORMS AND AUTHORITY: IC-NORM	Social-organizational features of the school which are identified by respondents as influencing adoption and implementation, including norms (notably norms relating to risk-taking, social networks, tolerance of diversity, collaborativeness), authority, and power structure.
INNOVATION HISTORY: IC-HIST	Experience of school over previous 3-5 years with introduction of new practices or programs, including: (a) number and type of programs, (b) comfort with, or perceived ease in, process of innovation implementation, (c) satisfaction with previous changes, and (d) presence of problem-solving or capacity-building mechanisms (e.g., lighthouse groups, planning commission, self-diagnosis procedures).
ORGANIZATION PROCEDURES: IC-PROC	General arrangements for organizing classroom and school-wide work, which may be independent of the innovation.
INNOVATION-ORGANIZATION CONGRUENCE: IC-FIT	Indices or events suggesting the degree to which properties of the school are consonant with characteristics of the innovation.

ADOPTION PROCESS - AP

EVENT CHRONOLOGY - OFFICIAL VERSION: AP-CHRON/PUB	Event history through adoption as recounted, in public documents or orally by district and school administrators, developers, early adopters, internal liaison or "delegate" staff among teachers and support personnel. Chronology includes significant events, backers and opponents, other key actors, stance of opinion leaders and gatekeepers within the school, rationale for adopting the practice or program, decision process (persons involved within school, mode of decision).
EVENT CHRONOLOGY - SUBTERRANEAN VERSION: AP-CHRON/PRIV	Event history through adoption as recounted either by public, promotional or delegated persons (see AP-EC/PUB) or by individual users, non-users, and other respondents and which suggests: (a) a consensual but different scenario, or (b) varying accounts of the same events. Chronology includes significant events, backers and opponents, other key actors, stance of opinion leaders and gatekeepers within the school, rationale for adopting the practice or program, decision process, etc. (See AP-EC/PUB)
INSIDE/OUTSIDE: AP-IN/OUT	Indices that the source of the practice or program (outside/inside district or outside/inside school building) was influential in the adoption process.
CENTRALITY: AP-CENT	Degree of priority, commitment, centrality of new practice or program to teachers, administrators, and support staff, eventually pupils, as compared to ongoing, routine activities or to other innovations (in preparation or operation).
MOTIVES: AP-MOT	Manifest and latent reasons given by teachers and administrators for adoption, including: (a) "legitimated" personal or institutional improvement, (b) response to external, institutional, classroom pressures or problems, (c) personal agendas, and (d) response to sanctions for non-adoption.

BEST COPY AVAILABLE

USER FIT: AP-FIT	Perception by teachers of congruence between personal goals, theories of instruction or learning and congenial ways of working with pupils, and goals, theories, implicit or explicit working arrangements contained in new practice or program.
PLAN: AP-PLAN	Components and perceived adequacy of plan for implementation, including provisions for training, monitoring, debugging, support.
READINESS: AP-REDI	Perception of institutional and personal capacities or willingness to implement new program in form adopted. Sub-categories include commitment, understanding, materials and equipment, skills, time allocation, organizational backup.
CRITICAL EVENTS: AP-CRIT	Recollected incidents or moments which are judged as critical in determining the outcome of the adoption process, including crises or conflicts, key decisions or interventions.

SITE DYNAMICS AND TRANSFORMATIONS - TR

EVENT CHRONOLOGY - OFFICIAL VERSION: TR-CHRON/PUB	Event chronology during initial and ongoing implementation, as recounted by users, administrators or other respondents.
EVENT CHRONOLOGY - SUBTERRANEAN VERSION: TR-CHRON/PRIV	Event chronology during initial or ongoing implementation, as recounted by users, administrators or other respondents, and which suggests: (a) a consensual but different scenario than the public version or (b) varying accounts of the same events.
INITIAL USER EXPERIENCE: TR-START	Emotions, events, problems or concerns, assessments, made by teachers and administrators during first 6 months of implementation.
CHANGES IN INNOVATION: TR-INMOD	Reported modifications in components of the new practice or program, on the part of teachers and administrators, during initial and ongoing implementation.
EFFECTS ON ORGANIZATIONAL PRACTICES: TR-ORG/PRAC	Indices of impact of new practice or program on: (a) intra-organizational planning, monitoring and daily working arrangements (e.g., staffing, scheduling, use of resources, communication among staff), and (b) inter-organizational practices (e.g., relationships with district office, school board, community and parent groups).
EFFECTS ON ORGANIZATIONAL CLIMATE: TR-ORG/CLIM	Indices of impact of new practice or program on institutional norms and interpersonal relationships, including effects on power and influence, social networks, institutional priorities for investing time and energy.
EFFECTS ON CLASSROOM PRACTICE: TR-CLASS	Indices of impact of new practice or program on regular or routine classroom practices (instructional planning and management).
EFFECTS ON USER CONSTRUCTS: TR-HEAD	Indices of effects of new practice or program on teacher and administrator perceptions, attitudes, motives, assumptions or theories of instruction, learning or management (e.g., professional self-image, revised notions of what determines achievement or efficiency, other attitudes toward pupils, colleagues, other staff members, stance toward other innovative practices).
IMPLEMENTATION PROBLEMS: TR-PROBS	Difficulties or concerns relating to implementation at the personal, classroom, organizational or extra-organizational levels, including reasons given for presence of difficulty or concern.

CRITICAL EVENTS: TR-CRIT	Observed or recollected incidents or moments which are judged as critical in determining the direction and the outcome of implementation, including crises, conflicts, moments of decision, departures and arrivals and interventions.
EXTERNAL INTERVENTIONS: TR-EXT	Contacts or interventions during implementation which are judged to be decisive or influential and which involve parties external to the school building, excluding external agents.
EXPLANATIONS FOR TRANSFORMATIONS: TR-SIZUP	Explanations by respondents of the reasons for which events occurred or effects observed during the implementation phase.
PROGRAM PROBLEM SOLVING: TR-PLAN	Plans or strategies devised for changing or improving the practice, solving problems in relation to its implementation at either the classroom or organizational levels.

NEW CONFIGURATIONS AND ULTIMATE OUTCOMES - NCO

STABILIZATION OF INNOVATION - CLASSROOM: NCO-INNOSTAB/CLASS	Degree to which new practice or program has "settled down" at classroom or operational level, notably: (a) the number and type of segments being or likely to be modified, but also including, (b) characteristics of the stabilized practice, and (c) depiction of the process of modification of those segments or components.
STABILIZATION OF USER BEHAVIOR: NCO-STAB/USER	Degree to which user (teacher) behavior has "settled down" at classroom or operational level relevant to the innovation, including indices of instructional planning and management being or likely to be modified.
USER FIRST-LEVEL OUTCOMES: NCO-USER 1OC	Perceived or observed outcomes (summative effects) at the classroom level which are directly related to the objectives or prescribed outcomes of the new practice or program as specified by the developer or user. These outcomes may be attitudinal (e.g., changes in pupils' self-concept or motivation) or behavioral (e.g., changes in pupil performance or in teacher diagnostic practices). They may be judged positively (as personal or classroom gains, strengths, advantages, effort well spent) or negatively (as losses, weaknesses, drawbacks, under-rewarded effort) and may be anticipated or unanticipated.
USER META OUTCOMES: NCO-USER META	More widespread or superordinate outcomes (summative effects) of the new practice or program as perceived or observed at the classroom level. These outcomes relate to: (a) increases or decreases in user cognitions or capacity (e.g., deeper understanding of learning or instructional processes, increases or decreases in classroom management skills) or to (b) changes in attitude (e.g., professional self-concept, stance toward staff coordination activities). These outcomes may be judged positively or negatively and may be anticipated or unanticipated.
USER SPINOFFS AND SIDE EFFECTS: NCO-USER SIDE	Perceived or observed outcomes of the new practice or program which are unofficial or unintended (unrelated to specific or general outcomes as specified in or deduced from developer's or user's description of the innovation). From the user's perspective, these outcomes may be judged positively or negatively, and may be anticipated (e.g., promotion) or unanticipated (e.g., closer collaboration with a colleague)
CLASSROOM INSTITUTIONALIZATION: NCO-INST/CLASS	Indices of regular or routine use of the new practice or program, including scheduling, materials, lesson or activity plans, formalized arrangements with colleagues.

BEST COPY AVAILABLE

STABILIZATION OF INNOVATION - ORGANIZATION: NCO-INNOSTAB/ORG	Degree to which new practice or program has "settled down" at the administrative or organizational level, including: (a) characteristics of the stabilized practice, (b) segments being or likely to be modified, and (c) depiction of the process of modification.
STABILIZATION OF ORGANIZATIONAL BEHAVIOR: NCO-STAB/ORG	Degree to which administrative behavior and/or daily working arrangements pertinent to the new practice or program have "settled down" at the institutional level, including indices of institutional planning, operations or communications in the process of modification or likely to be modified.
ORGANIZATIONAL INSTITUTIONALIZATION: NCO-INST/ORG	Regular or routinized indices of incorporation of the new practice or program in institutional functioning, including fixed scheduling in the curriculum, budget provisions, plans for continued backup, support by external agencies (e.g., central office).
ORGANIZATIONAL FIRST-LEVEL OUTCOMES: NCO-ORG 1OC	Perceived or observed outcomes (summative effects) at the organizational level which are directly related to the objectives or prescribed outcomes of the new practice or program as specified by the developer or administrator. These outcomes may be operational (changes in working arrangements) or attitudinal (changes in stance toward working arrangements connected with it). They may be judged positively (as administrative and organizational gains, strengths, advantages, efforts well spent) or negatively (as losses, weaknesses, drawbacks, under-rewarded efforts), and may be anticipated or unanticipated.
ORGANIZATIONAL META OUTCOMES: NCO-ORG META	More widespread or superordinate outcomes of the new practice or program as perceived or observed at the organizational level. These outcomes relate to increases or decreases in organizational capacity or climate (e.g., improved capability to administer other innovations, increased tension between teaching and administrative staff). These outcomes may be judged positively or negatively, and may be anticipated or unanticipated.
ORGANIZATIONAL SPINOFFS AND SIDE EFFECTS: NCO-ORG SIDE	Perceived or observed outcomes of the new practice or program which are unofficial or unintended (unrelated to specific or general outcomes as specified in or deduced from the developer's or administrator's description of the innovation). From the administrator's perspective, these outcomes may be judged positively or negatively, and may be anticipated (e.g., increased visibility in the district) or unanticipated (creation of cliques among teachers).
INSTITUTIONAL EXPANSION: NCO-INNOGRO/ORG	Evidence of the expansion of the practice either within the adopting school, within other schools in the district or outside the district.
ORGANIZATIONAL REDUCTION: NCO-INNODMIN/ORG	Evidence of the contraction or reduction of the practice from either the original set of users or from the set estimated at the point of implementation when stabilization occurs.

EXTERNAL AND INTERNAL ASSISTANCE - ASS

LOCATION: ASS-LOC	Positions of and relationship between assisters and receivers in the school, including: (a) physical position (outside/inside), (b) social position (status, power), (c) technical position (credibility, source, type and degree of expertise), and (d) interpersonal position (networks of association), indication of the influence of position on assistance given and received.
RULES, NORMS: ASS-RULE	Perceived agreements, constraints, codes of conduct within the school which regulate the seeking and providing of assistance.
ORIENTATION: ASS-ORI	Focus (content/process) and definition (expert/facilitator) of assister intention, role as perceived by receiver (coercive, re-educative).
TYPE: ASS-TYPE	Type and format of assistance provision, including technical, practical, psychological, administrative, political.
EFFECTS: ASS-EFF	Perceived or observed effects of assistance on implementation, both positive and negative, anticipated and unanticipated, direct (problem resolution) and indirect or more general (e.g., increased professional confidence).
ASSESSMENT BY RECIPIENTS: ASS-ASS	Assessment of assistance provided, including pertinence, adequacy, responsiveness, legitimacy, usefulness.
LINKAGE: ASS-LINK	Indications of assistance provided from more than one source, including: (a) degree of perceived integration or coordination, and (b) perceived effectiveness of combined assistance.

EMERGING CAUSAL LINKS - CL

NETWORKS: CL-NET	Functional grouping of persons, both formal and informal, within the school and between the school and external institutions or persons which influence the shape or direction of implementation.
RULES: CL-RULE	Consensual, dominant or pervasive ways of perceiving how and why ongoing work and interpersonal relations are carried out, understandable or legitimated.
RECURRENT PATTERNS: CL-PATT/LS CL-PATT/OS	Recurring descriptions, remarks, explanations, interactions or activities, either reported or observed, in direct relationship to the new practice or program but not deliberately or operationally included in its components.
EXPLANATORY CLUSTER: CL-EXPL SITECL-EXPL	Factors or features directly related to adoption or implementation of the new practice or program and observed or hypothesized to affect the shape, direction or magnitude of its effects, as judged by the field researcher (CL-EXPL) or a respondent (SITECL-EXPL).

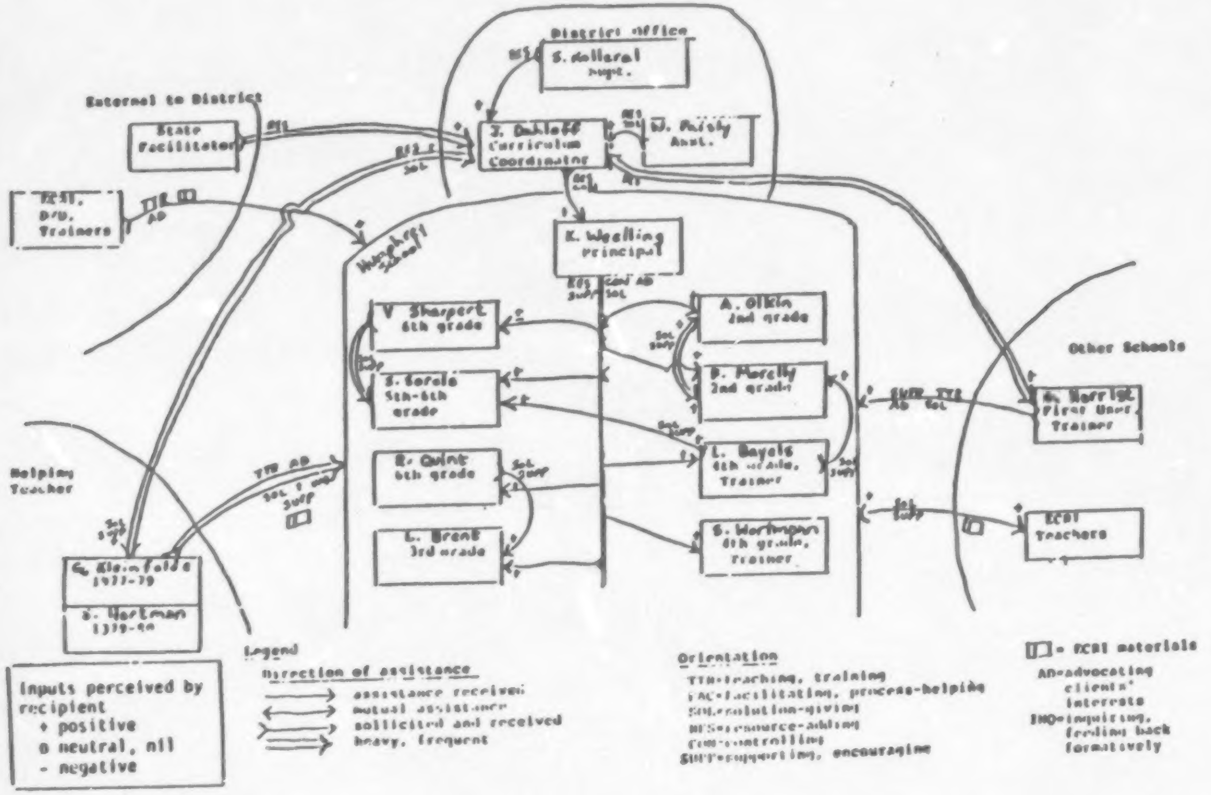
QUERIES - QU

SURPRISES: QU-!	Material from interviews, observations, documents which is striking or unexpected in light of other materials from the site.
PUZZLES: QU-Q	Material from interviews, observations, documents, etc. which either (a) cannot be accounted for, (b) needs closer analysis, or (c) contradicts other materials or emerging hypotheses.

BEST COPY AVAILABLE

Appendix F Illustration of organization chart with assistance flows (Masepa site)

Location and Orientation of Assistance


District Office
S. Mulleral
Supt.
J. Dahloff
Curriculum
Coordinator
W. Paisly
Asst.
External to District
State
Facilitator
ECRI
D/D.
Trainers
Humphrey
School
K. Weelling
Principal
V Sharpert
6th grade
S. Sorole
5th-6th
grade
R. Quint
6th grade
L. Brent
3rd grade
A. Olkin
2nd grade
D. Morelly
2nd grade
L. Bayeis
4th grade,
Trainer
S. Wortman
4th grade,
Trainer
Other Schools
G. Harrigt
First User,
Trainer
ECRI
Teachers
Helping
Teacher
G. Kleinfelde
1977-79
S. Hortman
1979-80
RES
SOL
TTR
AD
SUPP
CON
Inputs perceived by
recipient
+ positive
o neutral, nil
- negative
Legend
Direction of assistance
assistance received
mutual assistance
sollicited and received
heavy, frequent
Orientation
TTR=teaching, training
FAC=facilitating, process-helping
SOL=solution-giving
RES=resource-adding
CON=controlling
SUPP=supporting, encouraging
= ECRI materials
AD=advocating
clients'
interests
INQ=inquiring,
feeding back
formatively

BEST COPY AVAILABLE

Appendix G   Example of an event listing

MACRO	State mandates career education plans, 1974		*USOE announces funding, for P-P, 12/76. USOE in conflict with evaluators (Shellingham, Gardiner).	USOE finds evaluators unacceptable		*USOE funds end, 1/80 State rescinds $1 million in district funds *IV-C dissem. funds for 80-81 cancelled 5/80
LOCAL COMMUNITY		Board supports O'Hara/ Jenkins initiative on career ed planning.	Advisory council advises CARED planning.			Ford assembly plant closes; unemployment high
DISTRICT	O'Hara, Douglass involve consultants; career ed workshops '72 District-wide career ed program devel. Jenkins hires Jesseman, 8/74 Jesseman teaches career ed, 1975. O'Hara visits RBS to see EBCE program	Jenkins moves to central office, fall 75 *Schaeffer locates planning grant $ *O'Hara & Douglass to EBCE awareness conference, decision to adopt NWREL version of EBCE.	O'Hara & Jenkins hire Jesseman as director, 12/76	District funds 1 learning mgr. Jenkins enrolls own son in CARED	Jenkins completes dissertation (on CARED eval. data) Jenkins resigns for a superintendency.	Supt seeks other jobs; fails & returns Supt initiates task forces, reorg. effort Principal Gunn resigns Principal Marshall sent to central office Aldrin SHS eval by No. Central: tighten up Staffing cutbacks projected in both SHS's
CARED PROGRAM		Douglass writes proposal, help from Marshaw, O'Hara. Meetings with teachers for advice (incl. Jesseman, Colby). Meetings with principals Gunn & Marshall. *Ingraham from NWREL critiques proposal; rewritten. Proposal submitted 5/76 (Voc Ed, Part D) Douglass leaves for Africa 7/76 Proposal "fails" 8/76 Schaeffer pushes USOE; mistake found.	Siegrister hired 1/77 Jesseman, Siegrister to NWREL for training; return & plan CARED Advice meetings with teachers. Meetings with principals Gunn, Marshall. Decision to reduce CARED program to 4 hrs. Materials, forms & procedures revised. Siegrister recruits 327 job sites. Students recruited via random prodedure. Douglass hired; returns from Africa 8/77	Program opens, 32 students, 2 staff, 1 aide 9/77 NWREL's Schneidman assists PCCA consultants assist Colby hired 1/78 Colby to NWRL for training New evaluator (Schor) hired Summer program for gifted 7/78 Materials development: basic skills	Students expanded to 64 3 staff, 2 aides Non-random selection; majority lower 50%. Title IX consultant assists 2d summer program for gifted	Program has 70 students, 3 staff, 2 aides Decision to cut to 1 staff plus aides Siegrister, Colby take other local jobs Program has 50 students; Douglass is only learning mgr. Jesseman assists, 2 aides. Decision: 25 students, 1 staff, 1 aide next yr.
DISSEMINATION	NMU hires Walters, '72 NMU hires Thomson, '73 Walters & Thomson study EBCE in LaSalle	Braintree receives Part D funding, 9/76	Braintree begins implementation, 1/77	Perkinsville adopters visit CARED 3/78	Application for IV-C dissemination funds 10/78 *NMU, SDE, P-P & Braintree form EBCE consortium. 1st state EBCE conference 2/79 Interested districts visit CARED, Braintree 4/79 P-P & Waterford aid Perkinsville. 1st summer workshop, 7/79.	2d-year IV-C proposal prepared. Follow-up conference, 10/79 2d state EBCE conference, 3/80 Continuing aid to Perkinsville Visits by interested districts continue.
	BEFORE THE BEGINNING (pre Fall 75)	CONCEPT DEV/ PROPOSAL WRITING (1975-76)	FINAL PLANNING/ TRAINING Jan. thru summer 77	FIRST IMPLEMENTATION 1977-78	LATER IMPLEMENTATION 1978-79	1979-80

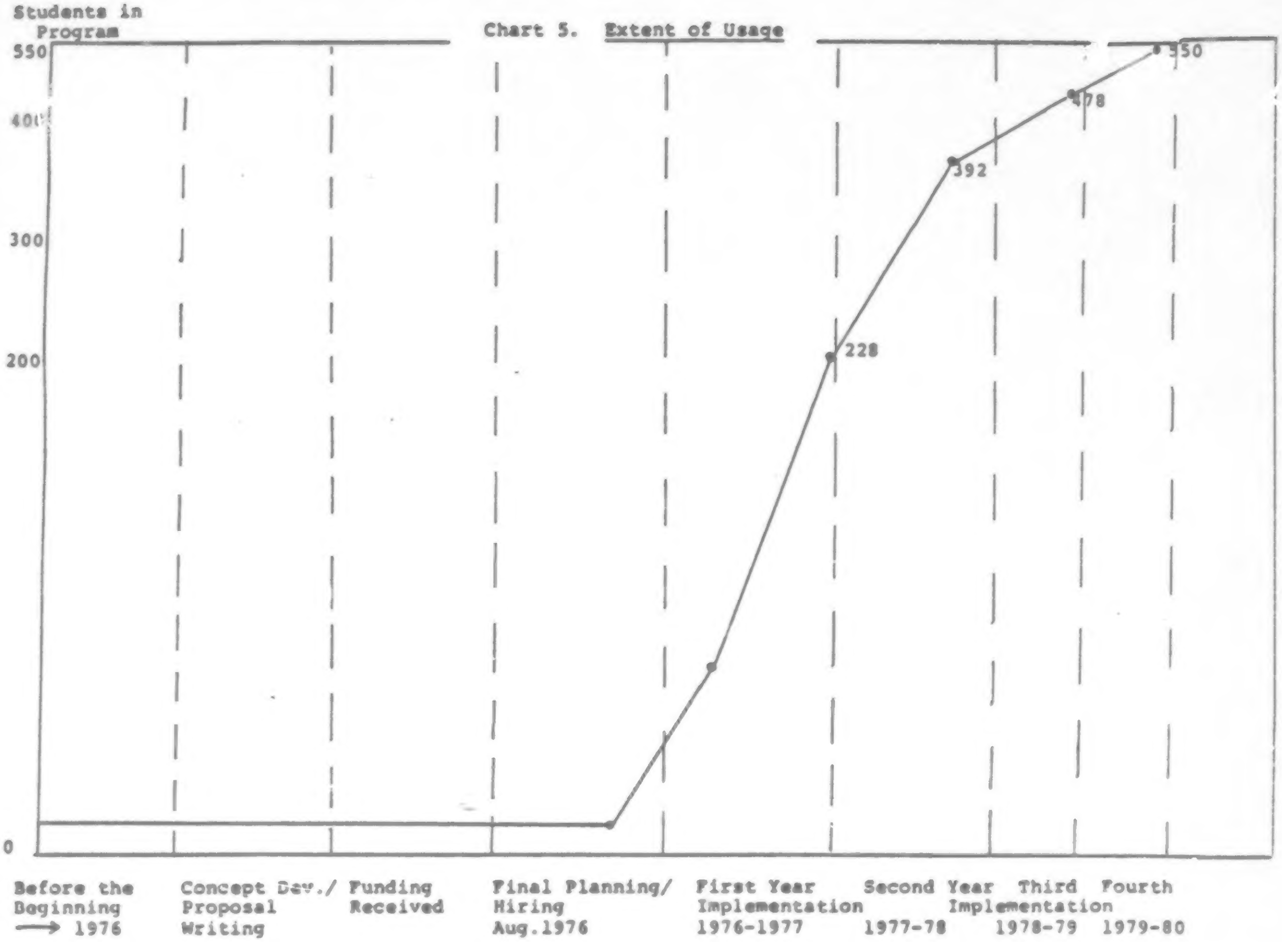
↑ FUNDING RECEIVED Dec. 76

* "Barometric" or key event, moving process ahead into new phase.

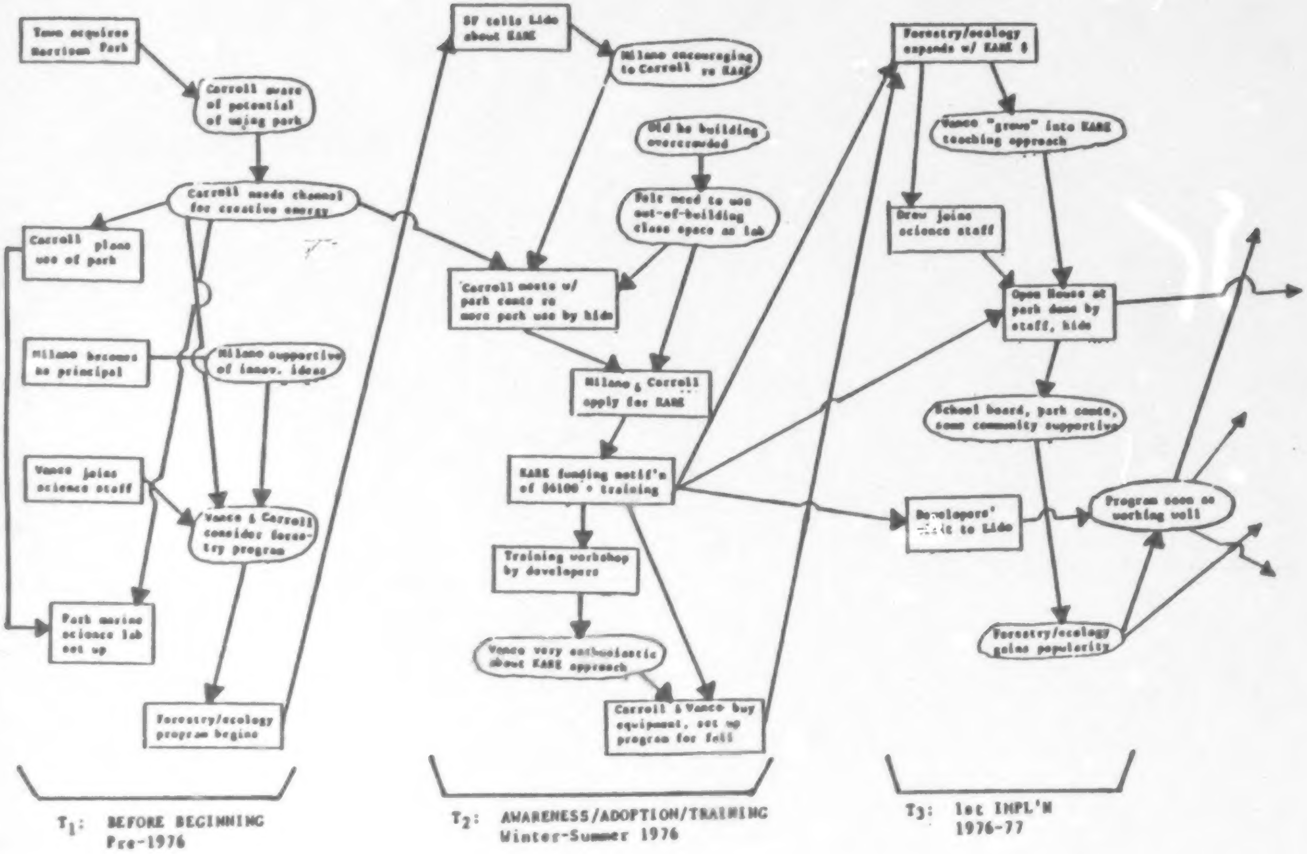
BEST COPY AVAILABLE

Appendix H; Example of a growth gradient chart

Chart 5. Extent of Usage



Appendix I: Example of an event-state network

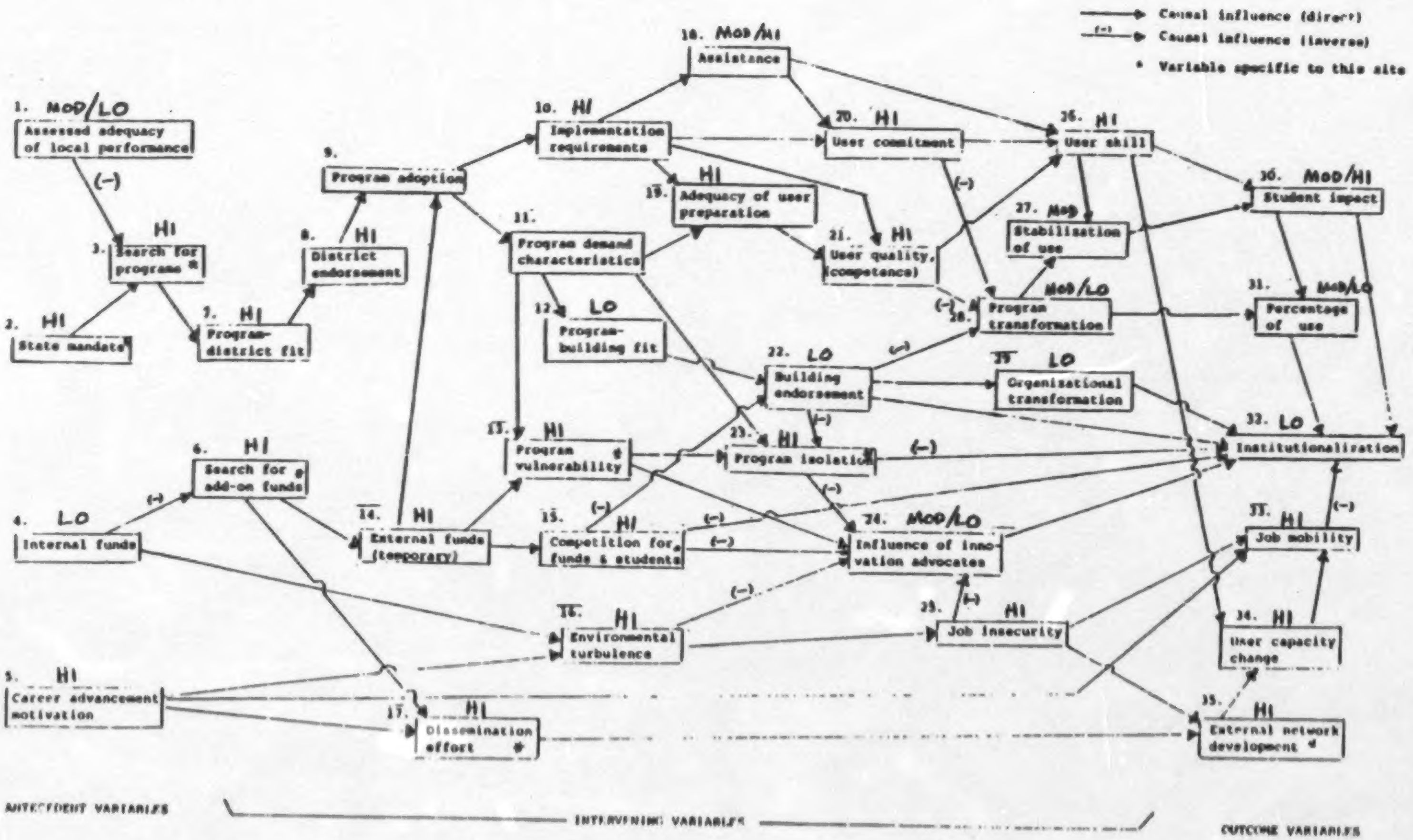

Town acquires Harrison Park
Carroll aware of potential of using park
Carroll needs channel for creative energy
Carroll plans use of park
Milano becomes he principal
Milano supportive of innov. ideas
Vance joins science staff
Vance & Carroll consider forestry program
Park marine science lab set up
Forestry/ecology program begins
SF tells Lido about KARE
Milano encouraging to Carroll re KARE
Old hs building overcrowded
Felt need to use out-of-building class space as lab
Carroll meets w/ park comte re more park use by kids
Milano & Carroll apply for KARE
KARE funding notif'n of $6100 + training
Training workshop by developers
Vance very enthusiastic about KARE approach
Carroll & Vance buy equipment, set up program for fall
Forestry/ecology expands w/ KARE $
Vance "grows" into KARE teaching approach
Drew joins science staff
Open House at park done by staff, kids
School board, park comte, some community supportive
Developers' visit to Lido
Program seen as working well
Forestry/ecology gains popularity
T_1: BEFORE BEGINNING
Pre-1976
T_2: AWARENESS/ADOPTION/TRAINING
Winter-Summer 1976
T_3: 1st IMPL'N
1976-77

NOTE: Boxes represent specific events; ovals represent system states
Arrows at right continue to later implementation phase.

Appendix I

Appendix J: Example of a causal network and associated text

Causal network for Perry-Parkdale CARED program


Causal influence (direct)
(-) Causal influence (inverse)
* Variable specific to this site
1. MOD/LO Assessed adequacy of local performance
(-)
2. HI State mandate*
3. HI Search for programs*
4. LO Internal funds
(-)
5. HI Career advancement motivation
6. HI Search for add-on funds*
7. HI Program-district fit
8. HI District endorsement
9. Program adoption
10. HI Implementation requirements
11. Program demand characteristics
12. LO Program-building fit
13. HI Program vulnerability*
14. HI External funds (temporary)
15. HI Competition for funds & students*
16. HI Environmental turbulence
17. HI Dissemination effort*
18. MOD/HI Assistance
19. HI Adequacy of user preparation
20. HI User commitment
21. HI User quality, (competence)
22. LO Building endorsement
23. HI Program isolation*
24. MOD/LO Influence of innovation advocates
25. HI Job insecurity
26. HI User skill
27. MOD Stabilization of use
28. MOD/LO Program transformation
29. LO Organizational transformation
30. MOD/HI Student impact
31. MOD/LO Percentage of use
32. LO Institutionalization
33. HI Job mobility
34. HI User capacity change
35. HI External network development*
(-)
ANTECEDENT VARIABLES
INTERVENING VARIABLES
OUTCOME VARIABLES

CAUSAL NETWORK: PERRY-PARKDALE

Introduction: looking for explanations

In addition to describing what happened to a given project, we want to know why the process of implementation took the form it did. To get at this, we have constructed a "causal network" for each of the 12 sites studied.

The causal network tries to put on one page the main factors, and the ways they influenced each other during the life of the project---or, in our case, up to June 1980 when we completed field work. There are two kinds of factors in the network. The first kind is general factors, ones which seemed important at all 12 sites to explain the pattern of events and outcomes. There are also factors unique to a given site. For example, in the causal network for Wayne-Westland, "internal funds" (box 4) is a general factor, while "search for add-on funds" (box 6) is a factor unique to Perry-Parkdale; it is marked with an asterisk.

At first glance, the boxes and arrows probably look more like a Rube Goldberg machine or a maze than a coherent network. But we think you'll find that it's relatively easy to follow, using the explanatory text that accompanies it. We believe that a more simplified figure wouldn't really do justice to the real complexities behind any attempt to change educational practices. As the figure shows, there are nearly three dozen key factors at work, and any single factor may influence several others.

How the network is organized

The network runs as follows: the beginning or antecedent factors are at the left of the page. They give way to intermediate or intervening factors, which usually come later in the story of the innovation; these variables cover most of the page, from numbers 6 through 29. The outcome factors are on the far right.

The arrows from one box to another mean that they are linked causally---that the box where the arrow begins has "caused" or "led to" the box where the arrow ends.

Each box also has a rating (high,moderate or low). For instance, box 3, "search for programs" is high, since active searching for a good career education program was going on. The active search led to choice of a program that was a good "fit" to the needs of the district, so box 7 ("program-district fit") is also rated high. Note that there is no rating for box 9 (program adoption) and box 11 (program demand characteristics). That's because these boxes are "yes/no" rather than being a measure of the degree or level of something.

When an arrow goes from a "high" box" to a "high" box, there is no sign above the arrow; the same is true when a "low" goes to a "low". In both cases the causal influence is direct. But when "high" goes to "low" or vice versa, there is a (-) sign above the arrow to show that the influence is inverse. For example, the arrow from box 4 to box 6 has a (-) sign, meaning that low amounts of internal funds led to high amounts of searching for add-on funds. A high-to-low sequence appears between box 23 and box 32: a high degree of program isolation led to a low degree of institutionalization (which was, you will note, also caused by many other factors).

Reading the network for Perry-Parkdale

Reading along from left to right, the sequence is roughly as follows.

The first three antecedent variables (1,2,and 4) worked out this way. The state mandate (2) for well-planned career education programs, together with assessment of local performance as less than adequate(1), led to a search for new programs (3), which proved to be a good fit (7) with district characteristics, and hence to district endorsement (8), and to adoption of the program(9).

But these were not sufficient causes of adoption. Inadequate local funds(4) to cover existing programs led to a ceaseless search for add-on funds (6) as almost a "way of life" for the district. That search led to getting temporary external funds(14) for a three-year period;they were the other basic cause of adoption (9).

The program, when adopted, proved to have substantial implementation requirements (10), which dictated the need for assistance (18), and also exerted a good deal of pressure for careful selection of high-quality staff (21), and for careful preparation (19) of them to carry out the program. The heavy implementation requirements (10), and to some degree the assistance provided (18) induced a good deal of user commitment (20), and in turn user skill (26) which was also high because of staff quality (21). High user skill, in conjunction with the fact that the program was quite well stabilized (27) by late 1980 brought about a reasonable degree of student impact (30).

That stream of causality refers essentially to internal program dynamics. What was happening at the district and building level?

Moving back to program demand characteristics (11), we note that certain aspects of the program (such as its removing students from high school control, and from high school courses and activities) caused poor fit between the program and the sending buildings (12). That poor fit led to lack of endorsement (22) from building principals, counselors and teachers. Poor endorsement was further weakened by the presence of competition for funds and for students(15), induced by the fact that the external funds (14) were temporary in nature.

Temporary funding, together with the program's demand characteristics (11) (for example, students were visible to employers, had to be responsible, and could easily behave like "assholes") also made for a good deal of program vulnerability (13). As a consequence, the staff tended to operate the program in a rather isolated fashion (23), to buffer it against the consequences of vulnerability when the immediate environmental endorsement (22) was weak. Certain program demand characteristics (11), such as the intensive time block, reinforced isolation (23) as well.

An added set of causal variables was also in play. The career advancement motivation (5) of key central office staff and principals operated to induce a good deal of turbulence (16) in the district. This turbulence effectively reduced the influence of those who were advocating the innovation (24); for some advocates, influence was further weakened by job insecurity (25).

So although the program was transformed and altered (28) to some degree to meet the objections stemming from low building endorsement (22);achieved a modest increase in percentage of use (31) for a while; and was, as we have seen, proving reasonably effective with students (30), these factors were not enough to insure the program's institutionalization (being built into the system) (32).

Rather, the weak building endorsement (22), the program's isolation (23), the competition for funds and students (15), and the weak exercise of influence by innovation advocates (24) resulted in weak institutionalization (32). So, it seems likely, did the departure of program staff, whose job mobility (33) was driven by both career advancement motivation (5) and job insecurity (25). It also seems likely that the very user capacity development (34) induced by experience with skillful use of the program (26), enhanced by the external network of contacts (35) generated through the dissemination effort (17) also contributed to the decision of staff members (and it seems, possibly the director) to move on.

Taken as a whole, these explanations seem baroque and complex. But there is fairly clear evidence that each causal link worked as described. The chart will look less complicated if one notes that the chart contains four basic streams: the program development stream across the top, the building/district stream in the middle, the career stream near the bottom, and the external dissemination/networking stream last. In many respects the final outcomes can be seen as stemming from conflicting pressures across the streams.

Appendix K

Comparison of survey "fidelity" data with field study "adaptation" data

The first pages attached describe the derivation and meaning of the survey measure of fidelity.

The final page is a work sheet showing specific site-to-site comparisons between the survey and field study ("ethno") data. Some explanations for deviant cases (strong disagreement) are added.

This material is extracted from a longer technical report, "The Outcomes of School Improvement Efforts", by M.B.Miles and A.M.Huberman (Andover, MA: The Network, Inc., 1981).

Degree of Implementation: Outcomes Achieved

Measuring the degree of implementation of new practices (innovations) in the classroom required us to describe them carefully in terms of possible use. We did this with an Innovation Configuration Checklist. This methodology, developed through research at the Texas R&D Center for Teacher Education (Hall & Loucks, 1978), asks the developer to identify key components of the innovation, and describe various ways the component might be operationalized in the classroom. A component, for example, might be a certain teaching strategy, a procedure for grouping students, or a system for record-keeping.

We developed configuration checklists by reading relevant descriptive material, interviewing the innovation's developer, interviewing and observing teachers using the innovation in an exemplary site, and rechecking with the developer. The emphasis in interviews and observations was constantly on what the innovation looked like in practice: on what teachers and students were doing. We also asked which components were seen as ideal and essential, and what "unacceptable" use of a component would look like.* A draft form of the checklist was developed after classroom observations, then discussed with the developer, to clarify the acceptability of different variations of each component.

The final checklist (see Fig. 2 for a sample) described the practice in terms of four to twelve key components; each component was depicted in several variations, described as ideal, acceptable and unacceptable from the developer's perspective.

---

*The procedure for checklist development is detailed in Heck, Stiegelbauer, Hall & Loucks (1981).

We used the configuration checklist in an interview with users to measure two aspects of use: (1) present practice (checklist was completed for each teacher, circling the variation within each component that best described current use; variations not on the checklist were specified); and (2) past practice (we asked teachers to describe what they had been doing prior to adoption in the innovation-relevant area (ex: math); and filled out another checklist.

The two checklists for each user (present practice and past practice) were scored according to the variations circled for each component. (Ideal = 3; Acceptable = 2; Unacceptable = 1; Absent = 0) Scores on each component were summed to provide total present practice and total past practice scores. Data from the checklists were used to derive three variables, User Change, Extent of Implementation, and Fidelity.

(Results on User Change and Extent of Implementation are not presented in this excerpt.)

Fidelity. Implementing innovations always involves a tension between remaining faithful to the developer's intent, and the demands of the local situation:

> There have to be short-cuts...There are just too many things to do to be able to do them all at once... We let the girls ease into it. (Local trainer, Masepa site)
>
> If you want to depart from the guide, ask me and also tell me why you want to do it and how it will fulfill the guide's objectives. We /dep't chairs/ mostly decide no before teachers even ask to make changes. (Dept. chair, Tindale site)

Our measure of Fidelity assesses the discrepancy between the developer's "ideal" and the user's current practice. It is calculated as

Fig. 2: Component checklist for Experience-Based Career Education

Matt's rating of CARED - 1/21/80 (GLOBAL)

	(1)	(2)	(3)	(4)
Component 1: Individualization of Student Learning	✓ Students & staff negotiate individualized learning plans, based on student's needs & interest.	An array of learning plans is available. Students select appropriate plan based on needs & prior experience.	All student projects are preassigned & not subject to negotiation.	
Component 2: Student Responsibilities and Use of Time	Students are responsible for budgeting their own time and for pacing thier activities to meet negotiated goals of learning project.	✓ Students are responsible for completing projects within a time frame negotiated with staff for selected projects.	Students are responsible for completing predetermined activities which have set schedules, goals, and time frames with no room for negotiation.	
Components 3: Direct Exposure of Students to Work Experience	✓ Each student engages in learning activities which involve active participation with adults in the work place.	Students individually visit work places & interview adults, but do not engage in the performance of job tasks.	Field trips (in groups) visit work places &/or students submit reports on occupations based on library research.	Adults visit the classroom & give lectures or demonstrations.
Component 4: EBCE	✓ The program completion requirements are clearly defined for each student and specifically include experiences in Basic Skills, Life Skills, & Career Development. Each student's learning program intergrates academic skills with life skills as a part of their community experiences.	Program completion requirements are not well defined or do not specifically require each student to have experiences in each of Basic Skills, Life Skills, & Career Development areas. However, two of the three are retained and are intergrated in student interdisciplinary learning acticities.	The EBCE program has a curriculum which is very similar to a course outline. Regular credits (electives or social science) are granted, & possibly grades, to students who "take this course".	
Component 5: Learning Strategies	All 6 of these learning strategies are used in the EBCE program: Competency certification, journals, career explorations, ~~learning~~ levels, projects, employer seminars NO	✓ A variety of learning strategies are used, but some of the 6 specified in (1) have been replaced by other strategies more suited to the particular goals of the adoption site.	As few as 3 strategies are used.	2 or less of the identified learning strategies, or acceptable alternatives, constitute the EBCE program.
Component 6: Parental Involvement	Parents are actively involved in the EBCE program by helping students plan their learning activities & meet program goals.	✓ Parents are regularly appraised of student progress in EBCE.	EBCE staff has no direct communication with parents on a regular basis.	

——— Anything to the right is "unacceptable".
— — Anything to the right is "acceptable".
— — Anything to the left is "ideal".

a percentage of the developer's ideal as follows:

$$\text{Fidelity} = \frac{\text{present practice}^{*}}{(3 \times \#\ \text{of components})}$$

The results are:

Fidelity	Individuals (N=292)	Sites (N=134)
0 - .20	2%	1%
.21 - .40	7	5
.41 - .60	13	13
.61 - .80	27	29
.81 - 1.00	51	51
Mean	.76	.77
S.D.	0.21	0.21
** Median	.81	.81
** Skewness	-1.00	-0.93

Given past discussions about the inevitability of local adaptation of innovations (Berman & McLaughlin,1976; Mann,1978), the degree of fidelity in our sample is striking. Over half show at least an 80% replication of the developer's ideal version of the practice; a full 12% show 100% fidelity. And less than a quarter of the sample fall below the 60% point. (We must remember, however, that an average component score of "acceptable" would yield a Fidelity score of .67; a Fidelity score of 80% means only that the average component is implemented at a level of 2.4 (about halfway between "acceptable" and "ideal". So the high Fidelity scores do not mean conformity to the developer's ideal, but, by and large, to an "acceptable" level.)* We can conclude that the typical implementation is reasonably faithful: users have not strongly adapted the innovations, nor implemented them selectively.

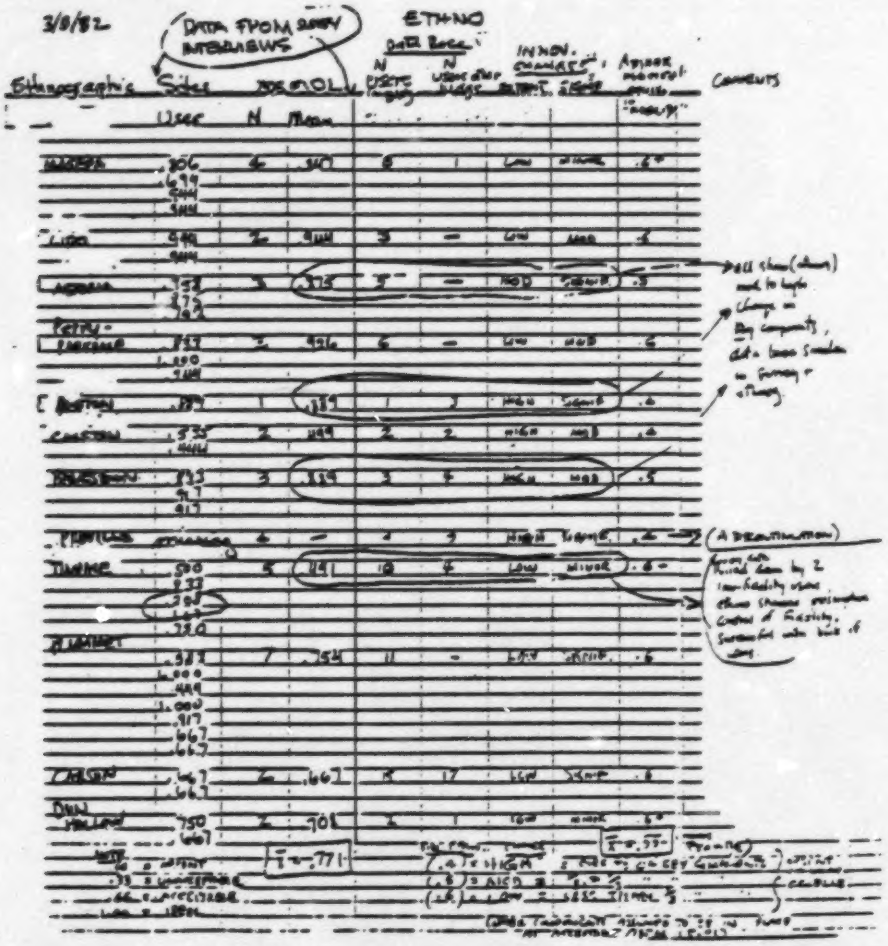
---

*The following weights were given to users' current practice:

0 = Component is absent, not implemented.
1 = Component is present in a version unacceptable to developer.
2 = Component is present in a version acceptable to developer.
3 = Component is present in a version considered ideal by developer.

We should note that there was much variation among developers. Some were extremely prescriptive, allowing no "acceptable" variations at all and demanding the "ideal" throughout. Others listed not one but several acceptable variations, providing much latitude for users.

Fidelity (survey data) and Innovation Change (field study data)



In brief, this worksheet shows how an analyst compared the survey data on fidelity (left side, column headed XDSFIDL) with the data on innovation change appearing in Chart 30, pp. 218-219. The user data on fidelity are averaged to produce a site mean. The meaning of scale scores is summarized in the note at the lower left corner of the worksheet. The field study ("ethno") data, drawn from Chart 30, are converted to numbers through a formula outlined in the lower right corner of the worksheet, where meanings for "high", "moderate" and "low" amounts of innovation change are defined. The circled cases are those where there was most disagreement between survey and field study data; the comments allude to possible explanations.

The NETWORK inc.

290 South Main Street, Andover, Massachusetts 01810